A/AC.105/548

Education, Training, Research and Fellowship Opportunities in Space Science and Technology and its Applications

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A Directory

United Nations

A/AC.105/548

Education, Training, Research and Fellowship Opportunities in Space Science and Technology and its Applications

A Directory

United Nations
New York, 1993

ORGANIZATION OF THE DIRECTORY

Page

INTRODUCTION 1

I. BASIC SPACE SCIENCES 3

II. REMOTE SENSING 109

III. SATELLITE COMMUNICATIONS 299

IV. SATELLITE METEOROLOGY 369

****

CONTENTS

INTRODUCTION 1

I. BASIC SPACE SCIENCES 3

Argentina

Comisión Nacional de Actividades Espaciales 3

Australia

A. Australian Defence Force Academy 5
B. University of Sydney, Department of Physiology 6
C. Australian National University 7
D. University of Wollongong, Department of Physics 9
E. Royal Melbourne Institute of Technology 10
F. La Trobe University 12
G. University of Newcastle 13
H. University of Tasmania 14

Austria

A. Institut für Nachrichtentechnik und Wellenausbreitung 16
B. Austrian Space Agency (ASA) 17

Bangladesh

Bangladesh Space Research and Remote Sensing Organization (SPARRSO) 19

Belgique

A. Facultés Univérsitaires Notre-Dame de la Paix 21
B. Université Libre de Bruxelles 22
C. Ecole Royale militaire 23
D. Université catholique de Louvain 25
E. Université de Liège 27

Brazil

A. Instituto de Aeronautica E Espaco 29
B. Instituto Tecnológico de Aeronáutica 30
C. Instituto de Pesquisas Espaciais (INPE) 31

Bulgaria

A. Bulgarian National Committee on Investigation and Exploration of Outer Space 33
B. Space Research Institute 34

Chad

Ecole Nationale des Travaux Publics 36

China

Space Science and Technology Center 38

Finland

A. University of Helsinki, Observatory and Astrophysics Laboratory 40
B. University of Oulu, Department of Physics 41
C. Helsinki University of Technology, Radio Laboratory 42
D. University of Turku, Space Research Laboratory 44
E. Technical Research Centre of Finland (VTT) 45
F. Helsinki University of Technology, Laboratory of Space Technology 46
G. Finnish Meteorological Institute, Department of Geophysics 47

Germany

Deutsche Forschungsanstalt für Luft- und Raumfahrt e.V. (DLR) (German Aerospace Research Establishment) 49

Greece

A. University of Athens, Remote Sensing Laboratory 51
B. Eugenides Foundation 52

India

A. Indian Space Research Organization (ISRO) 54
B. Tata Institute of Fundamental Research 55

Iraq
Space Department, Space and Astronomy Research Centre 57

Ireland
University College Dublin 59

Japan
Radio Research Laboratory 61

Mauritius
University of Mauritius, School of Science 63

Mexico
Universidad Nacional Autónoma de México (UNAM),
Instituto de Geofísica 65

Norway
A. Royal Norwegian Council for Science and the Humanities (NAVF) . . . 67
B. Norwegian Space Centre 68

Pakistan
Pakistan Space and Upper Atmosphere Research Commission
(SUPARCO) 70

Sweden
A. Swedish National Space Board 72
B. Chalmers University of Technology, Department of Radio and
Space Science 73
C. Royal Institute of Technology, Alfvén Laboratory,
Department of Plasma Physics 74
D. Swedish Institute of Space Physics 75

Uganda
A. Department of Meteorology 77
B. Survey Training School 78

United Kingdom of Great Britain and Northern Ireland
A. Dundee University 80
B. Imperial College, Space and Atmospheric Physics Group 81
C. Silsoe College 82
D. University of Leicester, Astronomy Department 84
E. University of Leicester, Department of Physics and Astronomy 85
F. University of Surrey, Centre for Satellite Engineering Research 86
G. Aberdeen University 88

H. University of Bristol, Department of Aerospace Engineering 89
I. University of Kent, Physics Laboratory 90
J. University of Manchester, Nuffield Radio Astronomy Laboratories 92
K. University of Nottingham, Institute of Engineering, Surveying and Space Geodesy 93
L. Southampton University 95

Ukraine
A. Kiev University, Department of Astronomy 97
B. N.G. Kholodny Institute of Botany of the Academy of Sciences of Ukraine 98

United States of America
A. Columbia University 100
B. National Aeronautics and Space Administration (NASA) 101
C. University of Washington, Department of Aeronautics and Astronautics 103
D. University of Alaska, Geophysical Institute and Physics Department 104
E. University of Iowa, Department of Physics and Astronomy 105
F. Zonta International (Amelia Earhart Fellowships) 107

II. REMOTE SENSING 109

Argentina
Comisión Nacional de Actividades Espaciales 109

Australia
A. Australian National University, Research School of Pacific Studies 111
B. Australian National University, Research School of Physical Sciences 112
C. James Cook University of North Queensland, Department of Geography 113
D. Macquarie University 115
E. University of New South Wales, Centre for Remote Sensing 116
F. University of Melbourne, Meteorological Department 118
G. University of Tasmania 119
H. Canberra College of Advanced Education 121
I. Royal Melbourne Institute of Technology, Department of Land Information 122
J. Royal Melbourne Institute of Technology, RMIT Centre for Remote Sensing 123

Austria
A. Institut für Nachrichtentechnik und Wellenausbreitung 126
B. Austrian Space Agency (ASA) 127

Bangladesh
Bangladesh Space Research and Remote Sensing Organization (SPARRSO) 129

Belgique
A. Université catholique de Louvain 131
B. Université de Liège 133
C. Université de Liège, Laboratire de géomorphologie et de géologie du Guaternaire 134
D. Université de Liège, Seminaire de geographie, Laboratorie de photo interprétation 135
E. Université libre de Bruxelles 137
F. Laboratoire de géographie régionale 138
G. Faculté des sciences agronomiques de l'Etat 140

Brazil
Instituto de Pesquisas Espaciais (INPE) 142

Bulgaria
A. Bulgarian Space Coordinating Committee 144
B. Space Research Institute 145

Chile
Universidad de Chile, Centro de Estudios Espaciales 147

Colombia
Instituto Geografico "Agustin Codazzi", Subdireccion de Docencia E Investigacion 149

Denmark
A. Technical University of Denmark, Electromagnetic Institute 151
B. University of Copenhagen, Institute of Geography 152

Ecuador
CLIRSEN/Cotopaxi Ground Station 155

Egypt
Academy of Scientific Research and Technology, Remote Sensing Center 157

Finland
A. Helsinki University of Technology, Laboratory of Space Technology 159
B. Helsinki University of Technology, Institute of Photogrammetry and Remote Sensing 160
C. Technical Research Centre of Finland (VTT) 161

France
Groupement pour le développement de la télédétection aerospatiale (GDTA) 163

Germany
A. Deutsche Forschungsanstalt für Luft- und Raumfahrt e.V. (DLR) (German Aerospace Research Establishment) 165
B. German Foundation for International Development, Food and Agriculture Center 166

Greece
A. Institute of Geology and Mineral Exploration 168
B. University of Athens, Remote Sensing Laboratory 169

India
A. Indian Space Research Organisation (ISRO), Department of Space 171
B. Indian Institute of Remote Sensing (IIRS) 172
C. National Remote Sensing Agency (NRSA) 173
D. Space Applications Centre 175

Iraq
Remote Sensing Department, Space and Astronomy Research Centre 177

Japan
University of Tokyo, Institute of Industrial Science 179

Jordan
Royal Jordanian Geographic Center 181

Kuwait
Kuwait Institute for Scientific Research 183

Libya
Libyan Center for Science of Remote Sensing and Space 185

Malaysia

A. Malaysian Agricultural Research and Development Institute (MARDI) ... 187
B. Malaysian Centre for Remote Sensing (MACRES) ... 188

Mauritius

University of Mauritius, School of Science ... 190

Mexico

Universidad Nacional Autónoma de México (UNAM), Instituto de Geofísica ... 192

Netherlands

International Institute for Aerospace Survey and Earth Sciences (ITC) ... 194

New Zealand

A. Department of Scientific and Industrial Research (DSIR), Division of Information Technology ... 197
B. DSIR, Physical Sciences ... 198
C. DSIR, Land Resources ... 199

Nigeria

University of Lagos, Department of Geography ... 201

Norway

Norwegian Space Centre ... 203

Pakistan

Pakistan Space and Upper Atmosphere Research Commission (SUPARCO) ... 205

Philippines

Natural Resources Management Center (NRMC) ... 208

Poland

Institute of Geodesy and Cartography ... 210

Qatar

University of Qatar, Scientific and Applied Research Center (SARC), Remote Sensing Unit (RSU) ... 212

Russia
Moscow Engineering Institute for Geodesy, Cartography and Aerial Photography 214

Saudi Arabia
Saudi Center for Remote Sensing 216

Singapore
National University of Singapore 218

South Africa
Council for Scientific and Industrial Research (CSIR) 220

Sri Lanka
Arthur C. Clarke Centre for Modern Technologies 222

Sweden
A. Swedish National Space Board 224
B. Swedish Space Corporation 225
C. Chalmers University of Technology, Department of Radio and Space Science 226
D. Stockholm University, Department of Physical Geography 228

Syrian Arab Republic
General Organization of Remote Sensing (GORS) 230

Thailand
A. National Research Council 232
B. Kasetsart University, Faculty of Forestry 233

Trinidad and Tobago
Institute of Marine Affairs 235

Turkey
Tübitak Marmara Research Center, Space Sciences Department 237

Uganda
A. Department of Meteorology 239
B. Survey Training School 240

United Kingdom of Great Britain and Northern Ireland
A. British Geological Survey 242
B. Dundee University 243
C. Institute of Oceanographic Sciences 244

D. National Remote Sensing Centre Limited 245
E. Natural Environment Research Council, Institute of Terrestrial Ecology 247
F. Silsoe College 248
G. University College London, Department of Photogrammetry and Surveying 250
H. University of Aston, Remote Sensing Unit 251
I. University of Bristol, Remote Sensing Unit 252
J. University of London, School of Oriental and African Studies 254
K. University of Bradford, Department of Computing 255
L. University of Bradford, Department of Electrical Engineering 256
M. University of Edinburgh, Department of Meteorology 258
N. University of Glasgow, Department of Geography and Topographic Science 259
O. Keele University 260
P. University of Nottingham, Institute of Engineering, Surveying and Space Geodesy 262
R. University of Reading, Department of Meteorology 263
S. University of Sheffield, Department of Geography 265

United States of America

A. University of Alaska, Geophysical Institute and Physics Department 266
B. University of Washington, Department of Electrical Engineering 267
C. City University of New York (CUNY), Hunter College, Geology and Geography Department 269
D. University of Arizona, Arizona Remote Sensing Center 271
E. Environmental Research Institute of Michigan (ERIM) 272
F. National Aeronautics and Space Administration (NASA) 274
G. National Oceanic and Atmospheric Administration (NOAA), National Environmental Satellite, Data and Information Service (NESDIS) 275
H. United States Geological Survey (USGS) 277

Zimbabwe

National Remote Sensing Facility 280

United Nations Economic Commission for Africa (ECA)

A. Centre Régional de Télédétection de Ouagadougou, Burkina Faso 282
B. Regional Centre for Services in Surveying, Mapping and Remote Sensing, Kenya 284

C. Regional Centre for Training in Aerospace Surveys (RECTAS) 285

Asian Institute of Technology 288

Food and Agriculture Organization of the United Nations (FAO) Remote Sensing Centre 291

UNESCO 293

European Space Agency (ESA) 297

III. SATELLITE COMMUNICATIONS

Argentina
Comisión Nacional de Actividades Espaciales 299

Australia
A. Royal Melbourne Institute of Technology 301
B. Canberra College of Advanced Education 302

Austria
Institut für Nachrichtentechnik und Wellenausbreitung 304

Belgique
A. Université libre de Bruxelles 306
B. Université catholique de Louvain 307

Brazil
A. Instituto Tecnológico de Aeronáutica 310
B. Instituto de Pesquisas Espaciais (INPE) 311

Chile
Universidad de Chile, Centro de Estudios Espaciales 313

Colombia
Empresa Nacional de Telecomunicaciones (TELECOM) 315

Finland
A. Helsinki University of Technology, Radio Laboratory 317
B. Helsinki University of Technology, Laboratory of Space Technology 318
C. Tampere University of Technology 319

D. Technical Research Centre of Finland (VTT) 320

Germany

Deutsche Forschungsanstalt für Luft- und Raumfahrt e.V. (DLR)
(German Aerospace Research Establishment) 322

Ghana

Posts and Telecommunications Training School 324

Greece

A. OTE Telecommunication Training Centre 326
B. Eugenides Foundation, Space Research Department 327

India

A. Indian Space Research Organisation (ISRO), Department of Space 329
B. Space Applications Centre (SAC) 330

Jordan

Telecommunications College 332

Mexico

Universidad Nacional Autonoma de Mexico,
Instituto de Geofisica 334

Norway

A. Norwegian Space Centre 336
B. Norwegian Telecom, Research Department 337

Pakistan

Pakistan Space and Upper Atmosphere Research
Commission (SUPARCO) 339

Philippines

Philippine Communications Satellite Corporation 341

South Africa

A. Council for Scientific and Industrial Research (CSIR) 343
B. South African Broadcasting Corporation 344

Sweden

A. Swedish National Space Board 346
B. Swedish Space Corporation 347
C. Chalmers University of Technology, Department of
Radio and Space Science 348

Thailand
Chulalongkorn University, Department of Electrical Engineering 350

United Kingdom of Great Britain and Northern Ireland
A. British Telecom International Training College 352
B. Dundee University 353
C. University of Surrey, Centre for Satellite Engineering Research 354
D. Aberdeen University 356
E. University of Bradford, Department of Electrical Engineering 357
F. University of Bristol, Centre for Communications Research 358
G. University of Essex, Department of Mathematics 360
H. University of Kent, Physics Laboratory 361

United States of America
A. University of Washington, Department of Electrical Engineering 363
B. National Aeronautics and Space Administration (NASA) 365

Zimbabwe
University of Zimbabwe 367

IV. SATELLITE METEOROLOGY

Argentina
Comisión Nacional de Actividades Espaciales 369

Australia
A. University of Tasmania 371
B. Macquarie University 372
C. University of Melbourne, Meteorology Department 373
D. James Cook University of North Queensland 375

Austria
Institut für Nachrichtentechnik und Wellenausbreitung 377

Bangladesh
Bangladesh Space Research and Remote Sensing Organization (SPARRSO) 379

Belgique
A. Université de Liège 381
B. Universite catholique de Louvain 382
C. Universite libre de Bruxelles 384

Brazil
Instituto de Pesquisas Espaciais (INPE) 386

Bulgaria
A. Bulgarian National Committee on Investigation and Exploration of Outer Space 388
B. Space Research Institute 389

Chad
EFATA 391

Chile
Universidad de Chile, Centro de Estudios Espaciales 393

Denmark
University of Copenhagen, Institute of Geography 395

Ecuador
CLIRSEN/Cotopaxi Ground Station 397

Finland
Helsinki University of Technology, Laboratory of Space Technology 399

Germany
Deutsche Forschungsanstalt für Luft- und Raumfahrt e.V. (DLR) (Germany Aerospace Research Establishment) 401

India
A. Indian Space Research Organisation (ISRO), Department of Space 403
B. Space Applications Centre (SAC) 404

Mexico
Gerencia del Servicio Meteorologico Nacional 406

Netherlands
International Institute for Aerospace Survey and Earth Sciences (ITC) 408

Norway
Norwegian Space Centre 410

Pakistan
Pakistan Space and Upper Atmosphere Research Commission (SUPARCO) 412

Peru
SENAMHI 414

Philippines
Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA) 416

Qatar
Scientific and Applied Research Center (SARC), Remote Sensing Unit (RSU) 418

Saudi Arabia
Saudi Center for Remote Sensing 420

South Africa
Council for Scientific and Industrial Research (CSIR) 422

Spain
Instituto Nacional de Meteorología 424

Trinidad and Tobago
Meteorological Service 426

Uganda
Department of Meteorology 428

United Kingdom of Great Britain and Northern Ireland
A. Dundee University 430
B. University of Bristol, Remote Sensing Unit 431
C. University of Bradford, Department of Computing 432
D. University of Ediburgh, Department of Meteorology 434
E. University of Reading, Department of Meteorology 435
F. University of Bradford, Department of Electrical Engineering 436
G. University of Essex, Department of Mathematics 438

United States of America
A. University of Arizona, Arizona Remote Sensing Center 440
B. Columbia University, Goddard Institute for Space Studies 441
C. National Aeronautics and Space Administration (NASA) 443

D. National Oceanic and Atmospheric Administration (NOAA), National Environmental Satellite, Data and Information Service (NESDIS) 444

Zimbabwe
National Remote Sensing Facility 447

Food and Agriculture Organization of the United Nations (FAO)
FAO Remote Sensing Centre 449

INTRODUCTION

The Second United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE 82), held in Vienna from 9 to 21 August 1982, recommended (i) that the expanded United Nations Programme on Space Applications should develop a fellowship programme for in-depth training of space technologists and applications specialists, with the help of Member States and relevant international organizations, and establish and update lists of available fellowships in all States and relevant international organizations; and (ii) that an international space information service should be established, initially consisting of a directory of sources of information and data services. At its thirty-seventh session, held in 1982, the General Assembly of the United Nations endorsed these recommendations of UNISPACE 82 in its resolution 37/90.

Among the first activities conducted under that particular mandate was the convening, under the auspices of the United Nations Programme on Space Applications, of a United Nations International Meeting of Experts on Remote Sensing Information Systems, hosted and co-sponsored by the Government of the Federal Republic of Germany and held in Feldafing and Oberpfaffenhofen, Federal Republic of Germany, from 7 to 11 May 1984; the meeting was also supported by the European Space Agency. That Meeting of Experts recommended that the United Nations International Space Information Service should collect information on education and training opportunities and disseminate such information, on request, to Member States and specialized organizations. The Report on the International Meeting of Experts, including the recommendations, was submitted to the United Nations Committee on the Peaceful Uses of Outer Space at its twenty-eighth session, held in June 1985.

Starting in 1985, the United Nations, through a note verbale and a questionnaire, has been requested on regular basis information from Member States, United Nations specialized agencies and international agencies regarding education, training, research and fellowship opportunities available in different aspects of space science and technology, including basic space sciences, remote sensing, satellite communications and satellite meteorology, in their educational and scientific institutions and establishments. The information received have been published as directories (United Nations documents A/AC.105/366 and Adds.1 and 2, A/AC.105/432).

This directory is a fully revised, updated and expanded version of the earlier directory, based on the information submitted by Member States and international organizations up to 1 June 1992 in response to a request to Member States, specialized agencies and international organizations. The directory consists of four sections - basic space sciences, remote sensing, satellite communications and satellite meteorology. The information in each section has been arranged in alphabetical order by country name in English. The information is given in the language in which it was submitted.

The information contained in this directory for each institution includes the educational and research programmes offered, the facilities available, the prerequisite qualifications, financial information, fellowship opportunities and opportunities for international co-operation. Addresses and contact points for further information are also included.

An effort has been made to present, as accurately as possible, the information provided by responding Member States, specialized agencies and international organizations. However, programmes frequently change and users of this directory who are interested in a particular programme are urged to contact the institution for current detailed information. It should also be noted that the list of countries and institutions contained in this directory is not exhaustive. Further addenda to this directory will be issued, as necessary, with additional or updated information from Member States and international organizations.

It is hoped that this directory will be of assistance to Member States and will promote international co-operation in the peaceful uses of outer space. In particular, it is hoped that information on education and research opportunities will assist developing countries in establishing indigenous capabilities in space science and technology and its applications.

Comments, queries and information with respect to this directory, including additional submissions or updated information, should be sent to the following address:

International Space Information Service
Office for Outer Space Affairs (Room S-3260)
United Nations
New York, N.Y. 10017

I

BASIC SPACE SCIENCES

ARGENTINA

INSTITUCION

COMISION NACIONAL DE ACTIVIDADES ESPACIALES

Av. Dorrego 4010/18 (1425), Buenos Aires, Argentina

Fax: 541-774-5703 Teléfono: 774-9310, 771-5810

Persona a contactar: Dr. Jorge Sahade

Funciones principales de la institución: Asesoramiento al P.E.N. en materia espacial. Coordinación de la actividad espacial en la Argentina

1. PROGRAMAS ACADEMICOS Y CIENTIFICOS

Lista de cursos y actividades de investigación:
Cursos: Curso de Postgrado en Tecnología Aeroespacial
Proyectos:
- Desarrollo de un satélite científico (SAC-I)
- Rutina de manchas solares
- Aplicación de imágenes digitalizadas a la física solar
- Transporte y liberación de energia en fulguraciones solares
- Magnetismo terrestre aéreo y satelitario (MAGATYS)
- Evaluación regional de recursos geotérmicos (REGEOT)
- Sistemas fotovoltaicos autónomos
- Banco de ensayos de colectores solares
- Relevamiento solarimétrico y eólico

Duración/Frecuencia/Idioma(s) de enseñanza:
3 cuatrimestres/permanente/español

Distribución del tiempo en: Trabajo en clase/Laboratorio/Trabajo en el terreno/Investigaciones independientes:

Tipo de servicios o instalaciones: Laboratorios, computadoras, aulas
Número de participantes: Entre 1 y 2

Calificaciónes académicas (mínimas) requeridas: Grado en disciplinas afines a la especialidad

Certificados o diplomas extendidos por la institución: Certificados

2. COSTO DE LOS PROGRAMAS

Costo de los cursos, de los libros de texto, y de los materiales de Investigación afines: A ser definido en cada caso

Gastos mensuales de alojamiento, manutención y gastos menudos: --

3. DISPONIBILIDAD DE BECAS

Disponibilidad de becas para participantes extranjeros: Variable segun el caso

Otras posibilidades de ayuda financiera para participantes extranjeros: Alojamiento con tarifas preferenciales en el Centro Espacial San Miguel

4. COLABORACION CON LOS PAISES EN DESARROLLO: Si

Esfera de interés: Formación de recursos humanos, intercambio de tecnologías espaciales, asesoramiento, diseño de proyectos

Region geográfica determinada: Con todas las regiones

AUSTRALIA

A. INSTITUTION

AUSTRALIAN DEFENCE FORCE ACADEMY

Northcott Drive, Duntroon ACT 2600, Australia

Telex: FACMIL 62030 Tel.: (062) 688279 Cable: --

Contact person: Dr. J. P. Baird, c/o Dept. of Mechanical Engineering, Australian Defence Force Academy

Principal function(s) of institution: Teaching of undergraduate defence officers. Civilian postgraduate students

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: --
Research: Aerothermodynamics of re-entry

Duration/Frequency/Language(s) of instruction: 3rd yr. PhD/--/--

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --/--/--/100%

Facilities: Access to free piston shock tunnels capable of simulating speeds of 3-15 km/s and testing re-entry craft

Number of trainees: --

Entry requirements: Good engineering degrees

Degree/Diploma/Certificate awarded: Ph.D., M.Sc. from University of New South Wales

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: No fees charged

Monthly room and board and incidental expenses: N/A

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Aerothermodynamics of re-entry

Geographical preference: None

B. INSTITUTION

UNIVERSITY OF SYDNEY, DEPARTMENT OF PHYSIOLOGY

Sydney 2006, NSW, Australia

Telex: AA 26169 Tel.: -- Cable: UNIVSYD

Contact person: Dr. J.F.Y. Hoh

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: --
Research: Research into basic mechanisms of adaptation of skeletal muscles to the zero gravity environment of space. Studies conducted on changes in the muscle protein Myosin which determines muscular performance in rats to be flown in space. Studies also done on rats under conditions which simulate zero-gravity conditions. Research is also being done to eliminate the physiological mechanisms for adaptive changes of muscles under zero-gravity conditions.

Duration/Frequency/Language(s) of instruction: 3 yrs/annually/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --/--/--/100%

Facilities: Ph.D. programme within the Faculty of Sciences

Number of trainees: 1

Entry requirements: B.Sc.(Hon) in Physiology/Biological Sciences

Degree/Diploma/Certificate awarded: Ph.D.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Space physiology

Geographical preference: None

C. INSTITUTION

AUSTRALIAN NATIONAL UNIVERSITY

G.P.0. Box 4, Canberra ACT 2601, Australia

Telex: 62615 Tel.: (062) 492425 Cable: –

Contact person: R.W. Boswell, Plasma Research Lab.

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: --
Research: Magnetospheric and auroral physics (interaction of waves with plasma, active experiments with electron beams, computer simulation)

Duration/Frequency/Language(s) of instruction: --/--/--

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --/--/--/100%

Facilities: Space simulation chamber, comprehensive diagnostics, fast computers (Cyber 205)

Number of trainees: --

Entry requirements: B.Sc. Honours (physics). 1st class

Degree/Diploma/Certificate awarded: 3-6 year Ph.D.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: $A 400-500

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: 5 fellowships exist on a competitive basis

Other financial support available for foreign participants: Other financial aid possibilities exist

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Laboratory and computer space plasma simulation

Geographical preference: --

D. INSTITUTION

UNIVERSITY OF WOLLONGONG, DEPARTMENT OF PHYSICS

P.0. Box 1144, Wollongong, NSW 2500, Australia

Telex: -- Tel.: 042-213-517 Fax: 042-213-151
E-mail: wjzealy@ UOW.EDU.au or p.nulsen@UOW.EDU.au

Contact person: Dr. William J. Zealey

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Undergraduate (Astronomy/Astrophysics); Grad.Dip (Astronomy/Astrophysics); M.Sc. (Astronomy/Astrophysics); Ph.D. (Astronomy/Astrophysics);

Research: Image digitising and processing; optical, infrared and radio observations of galactic and extragalactic star formation regions; studies of long period variable stars; numerical hydrodynamics and astrophysical flows

Duration/Frequency/Language(s) of instruction: 2nd year B.Sc. 56 hrs, 3rd year B.Sc. 112 hrs, M.Sc. 1-2 years, Ph.D. 3 years/annually/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: B.Sc. 40%/40%/0/20%; Grad Dip.M.Sc. 40%/40%/0/20%; M.Sc. 2 years 40%/40%/0/20%; M.Sc. 1 year 0/100%/0/0; Ph.D. 3 years 0/100%/0/0

Facilities: Image digitising/processing systems [PC/Sun]; 0.4m DFM Telescope, CCD, photometer; TV Blink comparator; ESO/SERC plate libraries, CDROM planetary image library; access to AAT, ANU, AT telescopes; access to Science Centre Planetarium [1992]

Number of trainees: Undergraduate/Grad Dip - not set; Postgraduate - 2 M.Sc. and 1 Ph.D. per year

Entry requirements: see University Calendar or Advice to Overseas students

Degree/Diploma/Certificate awarded: B.Sc./Grad Dip./M.Sc./Ph.D.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: HECS charges to Australian students. Apply for details of overseas fees.

Monthly room and board and incidental expenses: Apply for details

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Equity and Merit/DEET Overseas Postgrad. Awards [forms available via International Office, UOW]

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Astronomy/physics education/planetarium techniques

Geographical preference: Asian - Pacific

E. INSTITUTION

ROYAL MELBOURNE INSTITUTE OF TECHNOLOGY

P.0. Box 2476 V, Melbourne, Victoria, 3001, Australia

Telex: AA36406 Tel.: (03) 6620611 (Advance College)
(03) 6635611 (Tech College)

Cable: MELTECH MELBOURNE

Contact person: Dr. L. Balzer, Dean, Applied Sciences

Principal function(s) of institution: Education and applied research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Dynamics of satellites, spacecraft structural analysis, orbital payload structural verification
Research: --

Duration/Frequency/Language(s) of instruction: One semester/Annually/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 60%/40%/--/--

Facilities: Large computer and finite element software. Vibration test equipment

Number of trainees: Between 8 and 30

Entry requirements: Entry to undergraduate Aeronautical Engineering preferably with Mathematics and Physics background. For Master's degree, preferably science and engineering

Degree/Diploma/Certificate awarded: Part of Bachelor of Engineering (Aeronautical) course

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: $A 700

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Satellite dynamics and control; spacecraft structures - static and dynamic analysis (Engineering Faculty); Satellite positioning technology (Applied Science Faculty)

Geographical preference: Engineering Faculty - South East Asia; Applied Science Faculty - none

F. INSTITUTION

LA TROBE UNIVERSITY

Bundoora, VIC 3083, Australia

Telex: AA33143 Tel.: 4792735 Cable: LA TROB

Contact person: Prof. K.D. Cole, Dept. of Physics

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: Physics of the upper atmosphere, ionosphere and magnetosphere

Duration/Frequency/Language(s) of instruction: 1 year/Annually/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: Varies according to level

Facilities: Computing facilities, ionosondes, photometer, Fabry Perot interferometer, Faraday rotation measurements, geomagnetic pulsation recording at field station at Beveridge, Victoria

Number of trainees: Between 1 and 8

Entry requirements: B.Sc.

Degree/Diploma/Certificate awarded: B.Sc. (Hons) or M.Sc. (Prelim)

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: $A 2100 + visa fee

Monthly room and board and incidental expenses: $A 700

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: 4 postdoctoral fellowships and 40 postgraduate scholarships

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Ionospheric physics

Geographical preference: Preferably with developing countries in the region

G. INSTITUTION

UNIVERSITY OF NEWCASTLE

Newcastle NSW, Australia 2308

Telex: -- Tel.: -- Cable: --

Contact person: Assoc. Professor B.J. Fraser

Principal function(s) of institution: Teaching and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Research: Studies of particle interaction with the ionosphere via micropulsations

Duration/Frequency/Language(s) of instruction: --/--/--

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --/--/--/10%

Facilities: --

Number of trainees: Between 1 and 3

Entry requirement: A good honours degree

Degree/Diploma/Certificate awarded: M.Sc., Ph.D.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: 15 fellowships/scholarships, Approx $A. 10,000

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Master and doctoral research programmes, collaborative research

Geographical preference: None

H. INSTITUTION

UNIVERSITY OF TASMANIA

Dept. of Physics, Box 252C GPO, Hobart, Tasmania 7001, Australia

Telex: 58150 UNTAS Tel.: 202101 Cable: TASUNI

Contact person: Prof. P.A. Hamilton

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Principles of basic space sciences are included in a number of Bachelor of Science courses
Research: Astronomy, Astrophysics, Radio-astronomy, Cosmic Ray and Nuclear Physics

Duration/Frequency/Language(s) of instruction: M.Sc. and Ph.D. programmes, 3-5 years, available continuously, English language only.

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: Varies according to course.

Facilities: Extensive optical astronomy, radioastronomy, x-ray astronomy and cosmic ray equipment

Number of trainees: --

Entry requirements: B.Sc.(Hons.) or equivalent

Degree/Diploma/Certificate awarded: M.Sc., Ph.D.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: M.Sc.: $A 13,500 p.a.; Ph.D.: $A 13,500 p.a.

Monthly room and board and incidental expenses: Min $A 700

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Several scholarships a year (fees only).

Other financial support available for foreign participants: Various bilateral assistance schemes: e.g. Colombo Plan, South Pacific Aid programme, Malaysia Scholarship, Mara Scholarship

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: --

Geographical preference: None

AUSTRIA

A. INSTITUTION

INSTITUT FUR NACHRICHTENTECHNIK UND WELLENAUSBREITUNG

Inffeldgasse 12, A-8010, Graz, Austria

Telex: 31221 Tel.: 316 7061/7441 Cable: --

Contact person: Prof. W. Riedler

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: Courses: Space experiments; results of space research; plasma in space
Research: Development of space research payloads and experiments data analysis

Duration/Frequency/Language(s) of instruction: 1 hr a week/every winter semester/German

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 20%/20%/--/60%

Facilities: Development laboratories, test facilities, computers

Number of trainees: Between 1 and 2

Entry requirements: Bachelor's degree but Master's degree preferred

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses:-- (S 5,000 approx.)

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: 2 per year; fellowships offered under the auspices of the United Nations Space Applications Programme

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: See item 1

Geographical preference: None

B. INSTITUTION

AUSTRIAN SPACE AGENCY (ASA)

Garnisongasse 7, A-1090 Vienna, Austria

Telex: 116560 Tel.: 43+1+40381770
Fax: 43+1+428228 Cable: Asaspace Wien

Contact person: Prof. Johannes Ortner, Managing Director

Principal function(s) of institution: Administration and co-ordination

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: ASA is organizing workshops and summer schools together with other space organizations annually in the fields of space science and its applications. No formal course work is scheduled

Duration/Frequency/Language(s) of instruction: 10 days/each year/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 100%/--/--/--

Facilities: Congress House

Number of trainees: about 60

Entry requirements: M.Sc. or Ph.D.

Degree/Diploma/Certificate awarded: None

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: registration fee (approx. US$ 250)

Monthly room and board and incidental expenses: N/A

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: A few fellowships are available

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Space science and remote sensing

Geographical preference: None

BANGLADESH

INSTITUTION

BANGLADESH SPACE RESEARCH AND REMOTE SENSING ORGANIZATION (SPARRSO)

Sher-E-Bangle Nagar, Agargon, G.P.0. Box 529, Dhaka, Bangladesh

Telex: 642215 SRSBT Tel.: 313329, 313317 Cable: SPARRSO

Contact person: Dr. F.A. Khan, Chairman SPARRSO

Principal function(s) of institution: Research, development and training

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Satellite and rocket dynamics, interplanetary space, geomagnetism, solar radiation
Research: --

Duration/Frequency/Language(s) of instruction: Variable/Variable/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 100%/--/--/--

Facilities: Library

Number of trainees: Between 10 and 25

Entry requirements: Science/Engineering graduate

Degree/Diploma/Certificate awarded: Professional degree

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Variable

Monthly room and board and incidental expenses: $US 60.00 per day

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: --

Geographical preference: Preferably with neighbouring countries

BELGIQUE

A. ETABLISSEMENT

FACULTES UNIVERSITAIRES NOTRE-DAME DE LA PAIX

61, rue de Bruxelles, 500 Namur, Belgique

Numéro de télex: 59222 | Téléphone: 081/229061 | Adrese télégraphique: FACNAM

Responsable : Jacques Henrard

Vocation(s) principale(s) de votre établissement: Enseignement et recherche

1. PROGRAMMES DE CULTURE GENERALE ET SCIENTIFIQUES

Description des cours et activités de recherche:
Cours: Astronomie et mécanique céleste
Recherche: Mécanique céleste: détermination d'orbite de satellite artificiel; détermination d'orbite d'objets naturels du système solaire

Durée/Fréquence/Langue(s) d'enseignment: 1 an/annuelle/français

Répartition du temps alloué en Salle de classe/Laboratoire/Travail sur le terrain Recherche indépendante: 50%/--/--/50%

Moyens dont dispose l'établissement pour exécuter les programmes: Salles de cours. Ordinateur

Nombre de participants: Entre 1 et 3

Critères régissant l'admission: Licence en Sciences Mathématiques

Certificats ou diplômes obtenus: --

2. COUT DES PROGRAMMES

Frais de scolarité, manuels et autres matériaux de recherche: --

Frais mensuels de logement et de subsistance et faux frais: --

3. POSSIBILITES DE BOURSES D'ETUDES OU DE PERFECTIONNEMENT

Possibilités de bourses d'études ou de perfectionnement pour des participants etrangers: Néant

Existence d'autres possibilités d'octroi d'une aide financière pour participants étrangers: Néant

4. COLLABORATION AVEC PAYS EN DEVELOPPEMENT: Oui

Domaines qui vous intéressent: Mécanique céleste

Préférence géographique: Aucune

B. ETABLISSEMENT

UNIVERSITE LIBRE DE BRUXELLES

Avenue de F.D. Roosevelt, 50, B-1050 Bruxelles, Belgique

Numéro de télex: 23069
Téléphone: 32-2-6503141
Adresse télégraphique: UNILIB
Fax: 32 2 6503126

Responsable: M. J.C. Legros, M. M. Paiva

Vocation(s) principale(s) de votre établissement: Enseignement, recherche et développement

1. PROGRAMMES DE CULTURE GENERALE ET SCIENTIFIQUES

Description des cours et activités de recherche:
Cours: Physique
Recherche: Etude de matériaux en micro-gravité. Etude de la respiration en apesanteur

Durée/Fréquence/Langue(s) d'enseignement: --/--/--

Répartition du temps alloué en Salle de classe/Laboratoire/Travail sur le terrain/Recherche indépendante: --/--/--/--

Moyens dont dispose l'établissement pour exécuter les programmes: Crédits du Ministère de la politique scientifique et de l'Agence spatiale européen (ASE)

Nombre de participants: Entre 1 et 2

Critères régissant l'admission: Diplôme de 2ème cycle

Certificats ou diplômes obtenus: --

2. COUT DES PROGRAMMES

Frais de scolarité, manuels et autres matériaux de recherche: --

Frais mensuels de logement et de subsistance et faux frais: --

3. POSSIBILITES DE BOURSES D'ETUDES OU DE PERFECTIONNEMENT

Possibilités de bourses d'études ou de perfectionnement pour des participant étrangers: Néant

Existence d'autres possibilités d'octroi d'une aide financière pour participants étrangers: Bourses et stages ASE

4. COLLABORATION AVEC PAYS EN DEVELOPPEMENT: Oui

Domaines qui vous intéressent: Les domaines sont les mêmes que les descriptions des activités de recherche

Préférence géographique: Aucune

C. ETABLISSEMENT

ECOLE ROYALE MILITAIRE

Avenue de la Renaissance, 30, 1040 Bruxelles, Belgique

Numéro de télex: ERM-KMS 63756 Téléphone: 02/7339794 Adresse télégraphique: --

Responsable: --

Vocation(s) principale(s) de votre établissement: Enseignement

1. PROGRAMMES DE CULTURE GENERALE ET SCIENTIFIQUES

Description des cours et activités de recherche: La mécanique céleste appliquée aux satellites; la géodesie spatiale; la navigation par satellites

Durée/Fréquence/Langue(s) d'enseignement: 30 h/annuelle/français, néerlandais

Répartition du temps alloué en Salle de classe/Laboratoire/Travail sur le terrain/Recherche indépendante: 30%/10%/10%/50%

Moyens dont dispose établissement pour exécuter les programmes: Equipement pour la reception de messages GPS

Nombre de participants: --

Critères régissant l'admission: Universitaire

Certificats ou diplômes obtenus: Néant

2. COUT DES PROGRAMMES

Frais de scolarité, manuels et autres matériaux de recherche: --

Frais mensuels de logement et de subsistance et faux frais:-

3. POSSIBILITES DE BOURSES D'ETUDES OU DE PERFECTIONNEMENT

Possibilités de bourses d'études ou de perfectionnement pour des participants étrangers: --

Existence d'autres possibilités d'octroi d'une aide financière pour participants étrangers: --

4. COLLABORATION AVEC PAYS EN DEVELOPPEMENT: Oui

Domaines qui vous intéressent: Enseignement en géodesie-photogrammetrie
Préférence géographique: Aucune

D. ETABLISSEMENT

UNIVERSITE CATHOLIQUE DE LOUVAIN

Place de l'Université, B-1348, Louvain-la-Neuve, Belgique

Numéro de télex: 59516/UCL.AC	Téléphone: 010/43.21.11	Adresse télégrap.: --

Responsable: Prof. J. Wilmet, Unité de géographie, Place L. Pasteur, 3 B-1348, Louvain-la Neuve

Vocation(s) principale(s) de votre établissement: Enseignement, recherche et développement

1. PROGRAMME DE CULTURE GENERALE ET SCIENTIFIQUES

Description des cours et activités de recherche:
Cours: Physique de la Terre et de l'espace/Relativite et cosmologie/ Astronomie et mécanique céleste/Astrophysique/Physique de l'ionosphère et de la haute atmosphère/Séminaire d'astronomie et de géophysique/ Electromagnétisme cosmique/Magnétohydrodynamique/Calcul de trajectoires/Dynamique aérospatiale

Durée/Fréquence/Langue(s) d'enseignement: Depend des sujets traités et des préalables acquis par l'étudiant/--/français

Répartition du temps alloué en Salle de classe/Laboratoire/Travail sur le terrain/Recherche indépendante: La répartition exacte dépend des sujets. En général, on peut dire que le travail se répartit environ en trois tiers égaux entre le travail théorique en classe, le travail expérimental et le travail indépendant

Moyens dont dispose l'établissement pour exécuter les programmes: L'université dispose d'une équipe de recherche expérimentée et de moyens expérimentaux adéquats

Nombre de participants: Entre 10 et 20

Critères régissant l'admission: Le niveau dépend des cours choisis. Les critères ne peuvent donc pas être définis en général

Certificats ou diplômes obtenus: Les diplômes peuvent être, le cas échéant: licence spéciale en sciences physiques, licence en géographie appliquée, ingenieur civil en télécommunication. Certificats de spécialisation. Licence en sciences appliquées, maîtrise, doctorat

2. COUT DES PROGRAMMES

Frais de scolarité, manuels et autres matériaux de recherche: On peut considerer que le coût global d'une année d'études s'élève à environ FB 175.000 par an pour un célibataire. Ce montant comprend le droit d'inscription: FB 11.600 et le logement: environ FB 4.500 par mois

Frais mensuels de logement et de subsistance et faux frais: --

3. POSSIBILITES DE BOURSES D'ETUDES OU DE PERFECTIONNEMENT

Possibilités de bourses d'études ou de perfectionnement pour des participants étrangers: L'UCL octroie chaque année quelque 20 bourses à des ressortissants du tiers monde qui entament des études de postgraduat. Le montant mensuel de la bourse s'élève à FB 16.500 pour un célibataire. Le Centre social universitaire dispense dans certains cas une aide financière en cours d'année

Existence d'autres possibilités d'octroi d'une aide financière pour participants étrangers: Des bourses peuvent également être obtenues auprès de l'Administration générale de la coopération au développement à Bruxelles ainsi qu'auprès du Commissariat général aux relations internationales, également situé à Bruxelles, via le poste diplomatique belge à l'étranger. Enfin, des bourses sont disponibles auprès d'organismes internationaux tels que l'UNESCO, CEE, etc. Les conditions et les montants de ces bourses, variables selon les organismes, peuvent être obtenus auprès de ceux-ci.

4. COLLABORATION AVEC PAYS EN DEVELOPPEMENT: Oui

Domaines qui vous intéressent: --

Préférence géographique: Aucune

E. ETABLISSEMENT

UNIVERSITE DE LIEGE

Place du 20 Août, 7, 4000 Liège, Belgique

Numéro de
télex: 41320 Téléphone: 041/676668
Téléfax: 041/675613

Responsable: Centre de Recherches, IAL Space, Avenue du Pré 1-1 Aily, B-4900 Angleur, Liège

Vocation(s) principale(s) de votre établissement: Recherche et développement en optique et optoélectronique spatiale

1. PROGRAMMES DE CULTURE GENERALE ET SCIENTIFIQUES

Description des cours et activités:
Cours: 3ème cycle sur détecteurs optoélectroniques
Activités de recherche: Participation à divers projets: TDI, space télescope (FOC), Giotto, Hipparcos. Problèmes traités: radiometrie, tests optigues et optoélectroniques, alignements, conception de systèmes de tests, simulation thermique

Durée/Fréquence/Langue(s) d'enseignment: 60 h/bisannuelle/français

Répartition du temps alloué en Salle de classe/Laboratoire/Travail sur le terrain/Recherche indépendante: 40/20/--/--

Moyens dont dispose l'établissement pour exécuter les programmes: Laboratoires d'optique et optoeléctronique. Installation de traitement optique et digital d'images

Nombre de participants: 2

Critères régissant l'admission: Diplôme ingénieur civil ou docteur en science

Certificats ou diplômes obtenus: Néant

2. COUT DES PROGRAMMES

Frais de scolarité, manuels et autres matériaux de recherche: FB 100.000 fonctionnement par an pour tous les domaines des sciences et des technioues spatiales

Frais mensuels de logement et de subsistance et faux frais: FB 40.000 par mois

3. POSSIBILITES DE BOURSES D'ETUDES OU DE PERFECTIONNEMENT

Possibilités de bourses d'études ou de perfectionnement pour des participants étrangers: --

Existence d'autres possibilités d'octroi d'une aide financière pour participants étrangers: --

4. COLLABORATION AVEC PAYS EN DEVELOPPEMENT: Oui

Domaines qui vous intéressent: Optoélectronique spatiale, mais nous devons être financés à cet effet

Préférence géographique: Aucune

BRAZIL

A. INSTITUTION

INSTITUTO DE AERONAUTICA E ESPACO

Centro Técnico Aeroespacial, 12.225 Sao José dos Campos, Sao Paulo, Brazil

Telex: 133393-CTAEBR Tel.: 0123-414611
Fax: 0123-412522

Contact person: Director

Principal function(s) of institution: Research and development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: --
Research: Applied research on sounding rockets and satellite launchers.
Aeronautical research

Duration/Frequency/Language(s) of instruction: --/--/Portuguese

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --/--/--/--

Facilities: Laboratories of electronics, mechanics, propulsion, guidance and control, and aerodynamics

Number of trainees: --

Entry requirements: B.S. in the specific field

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Mechanical structures, aerodynamics, electronics, guidance and control, propulsion

Geographical preference: --

B. INSTITUTION

INSTITUTO TECNOLOGICO DE AERONAUTICA

Centro Tecnico Aeroespacial, 12200 Sao José dos Campos, Sao Paulo, Brazil

Telex: 133393 CTAEBR Tel.: 0123-211311 Cable: --

Contact person: Dr. Rodolpho Vilhena de Moraes

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Graduate courses in spatial mechanics
Research: Study of motion and equilibrium of celestial bodies

Duration/Frequency/Language(s) of instruction: 2-4 years/semester/Portuguese

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 50%/--/--/50%

Facilities: Library, computer facilities, astronomical observatory

Number of trainees: Up to 5

Entry requirements: B.Sc. degree (Mathematics, Physics or Engineering)

Degree/Diploma/Certificate awarded: Master and Doctor of Sciences, Master of Electronic Engineering Degree

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: $US 300.00

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: Eventual support from specific agencies such as CNPq, FAPESP, and CAPES

4. COLLABORATION WITH DEVELOPING COUNTRIES

Specific areas of interest: Control of attitude and orbits of artificial satellites, study of ionosphere

Geographical preference: --

C. INSTITUTION

INSTITUTO DE PESQUISAS ESPACIAIS (INPE)

Caixa Postal 515, 12200 Sao José dos Campos, SP, Brazil

Telex: 123-3530 INPE BR Tel.: (0123) 22.9977 Cable: --

Contact person: Dr. René A. Medrano-Balboa

Principal function(s) of institution: Research and development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Master's and Doctoral level graduate courses on Space Geophysics, Astrophysics, Radio Astronomy and Solar Physics
Research: High energy astrophysics, radio-astronomy and solar physics, geomagnetism, ionosphere, upper atmosphere, middle and lower atmosphere, nuclear geophysics

Duration/Frequency/Language(s) of instruction: Master's - 2,5 yrs; Ph.D.- 4 yrs/Annually/Portuguese

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 40%/30%/--/30%

Facilities: Laboratories, field work facilities when needed

Number of trainees: 47 (26 M.Sc.'s and 21 Ph.D.'s)

Entry requirements: B.Sc. for Master's Degree; M.Sc. for Doctoral courses

Degree/Diploma/Certificate awarded: Diplomas for Master's and Doctoral degrees. Certificates for short courses and training

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Graduate course: no tuition. Special arrangements for research materials. Other courses/training: special arrangements

Monthly room and board and incidental expenses: Approx. $US 300

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: Through Organization of American States (OAS) and other international organizations

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Same areas mentioned in summary of courses and research activities

Geographical preference: None

BULGARIA

A. INSTITUTION

BULGARIAN NATIONAL COMMITTEE ON INVESTIGATION AND EXPLORATION OF OUTER SPACE

Moskovska str. No. 6, Sofia 1000, Bulgaria

Telex: 23351 CLSRBG Tel.: 88 35 03
Cable: CLKI, Moskovska No. 6

Contact person: Ivan Kutiev, Acad. G. Bouchev Str. bl. 3, Sofia 1113, Bulgaria

Principal function(s) of institution: Research and development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: Upper ionosphere, middle atmosphere, magnetosphere, cosmic rays

Duration/Frequency/Language(s) of instruction: 1-3 yrs/every 1-3 yrs/English, Russian

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 30%/30%/--/40%

Facilities: Satellite experiments, ground-based facilities

Number of trainees: Between 2 and 6

Entry requirements: University education

Degree/Diploma/Certificate awarded: Professional certificate and/or Ph.D. degree for duration of 1-3 years if requested by the candidate

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: $US 800 per month

Monthly room and board and incidental expenses: $US 1800

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants:
Scholarship/fellowship opportunities available and organized on request and depending on agreement

Other financial support available for foreign participants: Other financial aid possibilities exist for foreign participants

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Rocket sounding of upper atmosphere, ionospheric physics

Geographical preference: Will establish collaboration wherever possible and feasible

B. INSTITUTION

SPACE RESEARCH INSTITUTE

6 Moskovska str., Sofia 1000, Bulgaria

Telex: 23351 IKI BAN BG Tel.: 883503
Fax: (3592) 801347

Contact person: P. Nenovsky

Principal function(s) of institution: Research, development and training

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Astrophysics, ionosphere, aurora, optical observations, magnetosphere, material sciences, satellite navigation systems, space biology, electronics

Duration/Frequency/Language(s) of instruction: --

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --

Facilities: Computer facilities; laboratory test equipment; image processing facilities.

Number of trainees: between 1 and 3

Entry requirements: Academic diploma

Degree/Diploma/Certificate awarded: Should be specified for each particular case.

2. COST OF PROGRAMMES

Depends on each particular case.

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Yes

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Above-mentioned areas of research

Geographical preference: Balkan region

C H A D

INSTITUTION

ECOLE NATIONALE DES TRAVAUX PUBLICS

B. P. Ndjamena, Chad

Telex: 5284 KD MINTP Tel.: 514971

Contact person: –

Principal function(s) of institution: Training, education

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Basic space sciences

Duration/Frequency/Language(s) of instruction: --/semester/--

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 2 hours a week/--/–/--

Facilities: --

Number of trainees: --

Entry requirements: --

Degree/Diploma/Certificate awarded: None

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: –

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: None

Specific areas of interest: --

Geographical preference: --

CHINA

INSTITUTION

SPACE SCIENCE AND TECHNOLOGY CENTER

Chinese Academy of Science, P.0. Box 8701, Beijing, China

Telex: -- Tel.: 28.5776 Cable: --

Contact person: Prof. Zhi-gang Lu

Principal function(s) of institution: --

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Scientific balloons (100,000 m), sounding rockets (solid fuel), instruments suitable for International Solar Terrestrial Physics Programme (ISTP), magnetosphere and plasma physics etc.

Duration/Frequency/Language(s) of instruction: --/--/--

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --/--/--/--

Facilities:--

Number of trainees: --

Entry requirements: --

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Basic space sciences

Geographical preference: --

FINLAND

A. INSTITUTION

UNIVERSITY OF HELSINKI, OBSERVATORY AND ASTROPHYSICS LABORATORY

Tähtitorninmäki, SF-00130 Helsinki

Telex: 358-0-124690 UNIH SF   Tel.: 358-0-1912940
Fax: 358-0-1912952

Contact person: Dr. Osmi Vilhu

Principal function(s) of institution: Research and education

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Elementary and Advanced courses in major fields of Astronomy and Space Astrophysics
Research: Planetary sciences, solar and stellar astronomy, interstellar matter and nebulae, radio-IR-optical-UV-X-ray astronomy

Duration/Frequency/Language(s) of instruction: 3-1/2 mos. every semester/Annually/Finnish and English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 25%/10%/15%/50%

Facilities: Computers, data handling systems

Number of trainees: up to 2

Entry requirements: M.Sc. (Ph.D. preferred)

Degree/Diploma/Certificate awarded: M.Sc., Phil. Lic. and Ph.D. can be awarded with major topic in Astronomy

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: US$1,000/year/person

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: 1

Other financial support available for foreign participants: Yes

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Planetary, radio and infrared, UV and X-ray astronomy

Geographical preference: None

B. INSTITUTION

UNIVERSITY OF OULU, DEPARTMENT OF PHYSICS

SF-90570 Oulu, Finland

Telex: 32375 OYLIN SF Tel.: 358-81-352031
Fax: 981-81-353259

Contact person: Prof. P. Tanskanen or Lasse Jalonen

Principal function(s) of institution: Education and Research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Auroral physics; Ionospheric and Magnetospheric Physics; Cosmic Ray Physics-Solar Modulation; Use of Incoherent Scatter Technique for ionospheric studies; Magnetic pulsations
Research: Satellite studies of magnetosphere/ionosphere coupling; Satellite studies of solar wind interaction with the magnetosphere

Duration/Frequency/Language(s) of instruction: 2 hours a week every semester/Finnish and English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 5%/--/--/35%

Facilities: Good computer facilities; high standards and highly qualified personnel

Number of trainees: up to 3

Entry requirements: M.Sc. or B.Sc.degree

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: 3000 FIM

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: Yes

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Magnetosphere/ionosphere research

Geographical preference: --

C. INSTITUTION

HELSINKI UNIVERSITY OF TECHNOLOGY, RADIO LABORATORY

Otakaari 5A, SF-02150 Espoo, Finland

Telex: 123889 hutel st   Tel.: 358-0-4512241
Telefax: 358-0-460224   Cable: --

Contact person: Dr. Antti Räisänen

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Radio science: fundamentals of astronomy and radio astronomy, antennas, radiometers, spectrometers and observation techniques
Research: Continuum and spectral line astronomy at millimeter waves; development of low-noise receivers, mixers and amplifiers at millimeter waves

Duration/Frequency/Language(s) of instruction:
1 Semester/Annually/Finnish

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 50%/25%/25%/Optional

Facilities: Radio research station with a precision 14 m telescope antenna; millimeter-wave receivers; millimeter wave measurement equipment

Number of trainees: No specific limits

Entry requirements: B.Sc. degree

Degree/Diploma/Certificate awarded: Diploma Engineer (M.Sc. equivalent); Licensiate of Technology; Doctor of Technology (requires 1-5 years thesis work)

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Textbooks only

Monthly room and board and incidental expenses: Fmk 1,500 or more

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: --

Geographical preference: None

D. INSTITUTION

UNIVERSITY OF TURKU, SPACE RESEARCH LABORATORY

Tykistokatu 4 A, 20520 Turku, Finland

Tel.: 358-21-6338734   Fax: 358-21-503060

Contact person: Jarmo Torsti

Principal function(s) of institution: Research and education

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Solar Plasma; Solar Wind; Cosmic Radiation; Cosmology
Research: Solar Physics; Energetic Particle; Cosmic Rays

Duration/Frequency/Language(s) of instruction: Semester/Annually/Finnish and English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 5%/--/--/95%

Facilities: Laboratory (incl. cleanroom) for design and assembly of instruments

Number of trainees: between 1 and 4

Entry requirements: B.A.

Degree/Diploma/Certificate awarded: None

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: None

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES:

Specific areas of interest: Yes

Geographical preference: None

E. INSTITUTION

TECHNICAL RESEARCH CENTRE OF FINLAND (VTT)

Box 100, SF-02151, Espoo, Finland

Telex: 122972 VTTHASF Tel.: 358-0-4561
Fax: 358-0-4567020

Contact person: L. Hippelainen

Principal function(s) of institution: Technical research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: --
Research: Scientific instruments for space missions; development of technologies for instruments and platforms

Duration/Frequency/Language(s) of instruction: --

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --

Facilities: Laboratories for fine mechanical fabrication, hybrid electronics, clean rooms, thermal vacuum chamber, vibration and EMC test facilities

Number of trainees: up to 5

Entry requirements: Undergraduate

Degree/Diploma/Certificate awarded: None

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: Yes

4. COLLABORATION WITH DEVELOPING COUNTRIES: None

Specific areas of interest: --

Geographical preference: ESA

F. INSTITUTION

HELSINKI UNIVERSITY OF TECHNOLOGY, LABORATORY OF SPACE TECHNOLOGY

Otakaari 5A, 02150 Espoo, Finland

Telex: 123889 Tel.: 358-0-4512371

Contact person: Marti Hallikainen

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: (a) Sace physics; (b) Radio astronomy;
Research: Radar Mapping of Mars

Duration/Frequency/Language(s) of instruction:
(a) Semester/Biannually/Finnish and English;
(b) Semester/Annually/Finnish and English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 50%/25%/25%/optional

Facilities: --

Number of trainees: between 1 and 10

Entry requirements: B.Sc.

Degree/Diploma/Certificate awarded: M.Sc. and Ph.D. degree in Space Technology

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Nominal text, etc. fees

Monthly room and board and incidental expenses: FIM 2,500 (in dormitory)

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: --

Geographical preference: --

G. INSTITUTION

FINNISH METEOROLOGICAL INSTITUTE, DEPARTMENT OF GEOPHYSICS

P.O. Box 503, SF-00101, Helsinki, Finland

Telex: 124436 EFKL SF Tel.: 358-019291 Cable: --

Contact person: Hannu Kosleinen

Principal function(s) of institution: Research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: --
Research: Space plasma physics; Magnetospheric physics; Planetary atmospheres; Solar wind physics; Stratospheric ozone research

Duration/Frequency/Language(s) of instruction: --

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --

Facilities: Modern computing facilities, electronics laboratory

Number of trainees: up to 3

Entry requirements: M.Sc. (highest grades)

Degree/Diploma/Certificate awarded: None

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants:--

Other financial support available for foreign participants: Yes

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: All research are collaborative

Geographical preference: --

GERMANY

INSTITUTION

DEUTSCHE FORSCHUNGSANSTALT FUR LUFT- UND RAUMFAHRT e.V. (DLR) (German Aerospace Research Establishment)

P.0. Box 90 60 50, 5000 Köln 90, Federal Republic of Germany

Telex: 8810-0 dlrd Tel.: 49(0)2203-6010
Fax: 02203-67310

Contact person: Prof. Dr. Walter Kroll, Chairman

Principal function(s) of institution: Aeronautical and space research and development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Microgravity Summer School (German Lectures)
Research: Material and life sciences under microgravity conditions, planetary sciences

Duration/Frequency/Language(s) of instruction: --/--/--/--

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: Not separately identified

Facilities: Laboratories; simulation-, training- and user support facilities

Number of trainees: Depends on number and scope of joint projects

Entry requirements: M.Sc. or Ph.D.

Degree/Diploma/Certificate awarded: None

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: N/A

Monthly room and board and incidental expenses: N/A

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: On a case-by-case basis, financial assistance for living expenses may be available

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Any area where a foreign partner will make a substantial (not necessarily financial) contribution to a joint project of common interest

Geographical preference: --

GREECE

A. INSTITUTION

UNIVERSITY OF ATHENS, REMOTE SENSING LABORATORY

P.O. Box 64022, Athens 157.01, Greece

Telex: 223815 UNIVGR Tel.: 30-1-7284299
Fax: 30-1-3602145

Contact person: Prof. M. Moutsoulas

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Comparative planetology; geodesy and remote sensing satellites; Geographic Information Systems
Research: --

Duration/Frequency/Language(s) of instruction:
1 semester/Annually/Greek

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 50%/30%/10%/10%

Facilities: --

Number of trainees: Between 5 and 30

Entry requirements: Must be a senior student of University

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Free for registered University students

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Yes. 6 available.

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest:

Geographical preference:

B. INSTITUTION

EUGENIDES FOUNDATION

387 Syngrou Ave., GR-175.64, Athens, Greece

Telex: --	Tel.: 30-1-9411181
Cable: FONDATIONEVGE	Fax: 30-1-9417372

Contact person: Mr. C. Nestoridis

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: General study of space applications, satellite communications, navigation and remote sensing
Research: --

Duration/Frequency/Language(s) of instruction:
1 week/Monthly/Greek

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 80%/--/--/20%

Facilities: Graphics system Amiga 2000; METEOSAT ground station; extensive science library

Number of trainees: Between 5 and 30

Entry requirements: B.Sc.

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: None

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: --

Geographical preference: --

INDIA

A. INSTITUTION

INDIAN SPACE RESEARCH ORGANIZATION (ISRO), DEPARTMENT OF SPACE

Antariksh Bhavan, New BEL Road, Bangalore 560094, India

Telex: 0845-2499 Tel.: 0812-334474 Cable: ISRO, BANGALORE
Fax: 0812-334229

Contact person: Mr. M. G. Chandrasekhar

Principal function(s) of institution: Research and development in space sciences, technology and applications

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Opportunities available for participation in some of the ongoing programmes of ISRO
Research: X-ray, infrared, gamma-ray astronomy; solar terrestrial programme; atmospheric dynamics using MST radar; satellite missions for space sciences; studies in aeronomy and space astronomy

Duration/Frequency/Language(s) of instruction:
2 years/Annually/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --

Facilities: Observation time on astronomy telescopes may be provided to trainees. Payloads on sounding rockets could be offered to researchers from developing countries.

Number of trainees: --

Entry requirements: M.Sc.

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: No course fee is charged for participants covered under "Sharing of Experience in Space" (SHARES) programme.

Monthly room and board and incidental expenses: Nominal rate charged for accommodation.

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: Yes. Financial support ranges from Rs.3000 to Rs.4500 per month for participants depending on their background and experience.

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Space sciences

Geographical preference: --

B. INSTITUTION

TATA INSTITUTE OF FUNDAMENTAL RESEARCH

Homi Bhabha Road, Bombay 400005 India

Telex: 0113009 Tel.: 219111 Cable: ZETESIS

Contact person: Prof. Dr. R.R. Daniel, Department of Physics

Principal function(s) of institution: Doctoral training and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Quantum mechanics; classical mechanics; statistical mechanics; nuclear physics; solid state physics; astronomy and astrophysics
Research: X-ray astronomy using balloons; infra-red astronomy-near and far IR; radio astronomy; cosmic rays; theoretical astrophysics and cosmology

Duration/Frequency/Language(s) of instruction: Each course of 30 lectures/Annually/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --

Facilities: Adequate research facilities to support programmes listed

Number of trainees: Between 1 and 2

Entry requirements: M.Sc. in Physics or Astronomy

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: Rs 2,000 minimum

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: 2-3 under the COSPAR programme of promoting space science in developing countries; usually for short-term visits less than 6 months

Other financial support available for foreign participants: Under bilateral agreements; agreements between science academies

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Areas listed under research summary in 1 above

Geographical preference: None

IRAQ

INSTITUTION

SPACE DEPARTMENT, SPACE AND ASTRONOMY RESEARCH CENTRE

P.0. Box 2441, Jadiriyah, Baghdad, Iraq

Telex: 213976 Tel.: 77651116, Ext. 1100 Cable: BATHILMI

Contact person: Dr. Kadhim Mouala

Principal function(s) of institution: Research and development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: --
Research: Cosmic rays (origin, meteorological effect), geomagnetism, atmosphere and space research (airglow, ionosphere, magnetosphere)

Duration/Frequency/Language(s) of instruction: Continuous/--/Arabic, English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --/40%/50%/10%

Facilities: Magnetic observatory, ionosonde, photometer (for air glow), sun spot observatory

Number of trainees: Between 2 and 4

Entry requirements: B.Sc. in physics

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: $US 3,000 a person

Monthly room and board and incidental expenses: $US 750

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: 2 per year

Other financial support available for foreign participants: Through individual agreements between the two parties

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Geomagnetism, cosmic rays, atmospheric and ionospheric research

Geographical preference: Ground-based stations having the same geographical co-ordinates as Iraq if possible

IRELAND

INSTITUTION

UNIVERSITY COLLEGE DUBLIN

Physics Dept., Stillorgan Road, Dublin 4, Ireland

Telex: -- Tel.: 01-693244 Cable: --

Contact person: N. A. Porter

Principal function(s) of institution: Teaching and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: Gamma ray astronomy

Duration/Frequency/Language(s) of instruction:
10 hrs/annually/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 100%/--/--/--

Facilities: Some high-speed electronics facilities, computer facilities and programmes

Number of trainees: 1

Entry requirements: Primary degree

Degree/Diploma/Certificate awarded: Higher degrees by research

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: L 1,000 for higher degree

Monthly room and board and incidental expenses: No provisions

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Limited number of fellowships through Royal Irish Academy

Other financial support available for foreign participants: Possibly EEC support

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Gamma ray astronomy using ground-based systems

Geographical preference: At good astronomical climate in the southern hemisphere

JAPAN

INSTITUTION

RADIO RESEARCH LABORATORY

Ministry of Posts and Telecommunications, 4-2-1 Nukuikita-machi, Koganei-shi,
Tokyo, 184, Japan

Telex: 2832611 Dempa J Tel.: 0423-21-1211
Cable: DEMPA KOKUBUNJI TOKYO

Contact person: --

Principal function(s) of institution: Research and development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: --
Research: Ionosphere and magnetosphere of the Earth, the Sun and solar-terrestrial physics by means of ground-based observations, rockets and satellites

Duration/Frequency/Language(s) of instruction: --/--/--

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --/--/--/--

Facilities: --

Number of trainees: --

Entry requirements: --

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: VHF long distance propagation experiment, standard frequency and time dissemination to Asian areas by means of satellite

Geographical preference: Asian countries to be covered by satellite beam

MAURITIUS

INSTITUTION

UNIVERSITY OF MAURITIUS, SCHOOL OF SCIENCE

Reduit, Mauritius

Telex: 4621 UNIMIW Tel.: (230) 454-1041 Fax: 454-9642

Contact person: Prof. Ch.V. Sastry; Prof. I. Fagoone

Principal function(s) of institution: Training, Education and Research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: --
Research: Survey of southern galactic plane at 150 MHz

Duration/Frequency/Language(s) of instruction: --

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --

Facilities: Aperture synthesis radio telescope under construction

Number of trainees: --

Entry requirements: M.Sc. in Physics/Astrophysics

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Radio astronomy

Geographical preference: Indian Space Research Organization (ISRO)

MEXICO

INSTITUTION

UNIVERSIDAD NACIONAL AUTONOMA DE MEXICO (UNAM), INSTITUTO DE GEOFISICA

Ciudad Universitaria, Coyoacan, 04510 México D.F., México

Telex: 5-50-2486 Tel.: (5) 5-48-1079

Contact person: Dr. Silvia Bravo

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Cosmical electrodynamics; plasma physics and magnetohydrodynamics; solar-terrestrial relationship; solar physics; magnetospheric physics; ionospheric physics; cosmic rays; interplanetary medium; planetary physics
Research: Solar-terrestrial relationships; solar physics; physics of the interplanetary space; cosmic ray physics; ionosphere studies; solar wind; magnetospheric micropulsations

Duration/Frequency/Language(s) of instruction: Semestral/each two semestres/Spanish

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: M.Sc.: 70%/--/--/30%; Ph.D.: --/--/--/100%

Facilities: Computing programmes, data banks, microcomputers

Number of trainees: up to 15

Entry requirements: B.Sc. degree and admission test

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Yes. Number is variable.

Other financial support available for foreign participants: Yes.

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Solar and interplanetary physics, cosmic rays

Geographical preference: None

NORWAY

A. INSTITUTION

NORWEGIAN RESEARCH COUNCIL FOR SCIENCE AND THE HUMANITIES (NAVF)

Sandakerveien 99, N-0483, Oslo 4

Telex: 0056 79913 navf-n Tel.: +47-2-157012
Cable: -- Fax: +47-2-205571

Contact person: Birgit Benterud, Research Coordinator

Principal function(s) of institution: NAVF's objective is to promote research in the humanities, the medical, natural and social sciences. The Council is a strategic, evaluating and funding organization emphasizing long-term national perspective for Norwegian basic research. As such it has the responsibility for coordination of space research in Norway.

The following institutions take part in the space research programme:

University of Oslo, P.O. Box 1072 Blindern, N-0316, Oslo 3
University of Bergen, P.O. Box 25, N-5027, Bergen Universitet
University of Tromso, P.O. Box 635, N-9001, Tromso
University of Trondheim, AVH, N-7055, Dragvoll
Norwegian Defence Research Establishment, P.O. Box 25, N-2007, Kjeller

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Graduate and post graduate courses
Research: Space physics, astrophysics, astronomy, life science, meteorology and oceanography

Duration/Frequency/Language(s) of instruction: Continuous/--/Norwegian

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: Differs in different institutions

Facilities: Andoya Rocket Range, operated by the Norwegian Space Centre, P.O. Box 85, Smestad, N-0309, Oslo 3

Number of trainees: --

Entry requirements: Contact should be made with universities and institutions

Degree/Diploma/Certificate awarded: Norwegian degrees equivalent to master's and doctor's degrees are given by all the universities

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Contact should be made with universities and institutions

Monthly room and board and incidental expenses: Contact should be made with universities and institutions

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: Post Doctorate Fellowship programme may be available from the Royal Norwegian Council for Scientific and Industrial Research (NTNF), P.O. Box 70, Tásen, N-0801, Oslo 8

4. COLLABORATION WITH DEVELOPING COUNTRIES: --

Specific areas of interest: N/A

Geographical preference: N/A

B. INSTITUTION

NORWEGIAN SPACE CENTRE

P.O. Box 85 - Smestad, 0309 Oslo 3, Norway

Telex: 0056-78174 SPACE N   Tel.: 47-2-52-3800
Fax: 47-2-52-2397

Contact person: Prof. Bjorn Landmark; Prof. Alv Egeland, Univ. of Oslo, Fysisk Inst., P.O. Box 1038, Blindern, 0315, Oslo 3

Principal function(s) of institution: Coordinating space activities in Norway

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Astrophysics (at the universities of Tromso and Oslo); cosmic physics and space plasma physics (at the universities of Tromso, Bergen and Oslo)
Research: --

Duration/Frequency/Language(s) of instruction: Semester/Year/Norwegian

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 40%/40%/20%/--

Facilities: Sounding rocket range at Andoya and satellite station at Tromso, both in northern Norway.

Number of trainees: Depends on level of course

Entry requirements: --

Degree/Diploma/Certificate awarded: Only normal diploma

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Normal university fees (low)

Monthly room and board and incidental expenses: NOK 4,000-5,000

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: The only Scholarship/Fellowship opportunities presently available are on a post doctorate or visiting scientist basis.

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Space sciences

Geographical preference: None

PAKISTAN

INSTITUTION

PAKISTAN SPACE AND UPPER ATMOSPHERE RESEARCH COMMISSION (SUPARCO)

Sector 28, Gulzar-e-Hijri, Off University Road, P.O. Box 8402, Karachi, 75270, Pakistan

Telex: 25720 SPACE PK Tel.: 471001/477151 Cable: SUPARCO
Fax: 9221-466902

Contact person: Dr. Zafar Muhammed Khan, Director, Ionospheric Research Division, SUPARCO

Principal function(s) of institution: Research and development in space science and technology

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Special course on space physics/space science at SUPARCO's Space and Atmospheric Research Centre (SPARCENT)
Research: Ionospheric physics and radio wave propagation; satellite tracking using optical and radio techniques; geomagnetism; observational astronomy

Duration/Frequency/Language(s) of instruction:
4 weeks/Annual/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 70%/20%/10%/--

Facilities: PIR 9A and 9B vertical incidence ionospheric sounders; Digisond 256 for acquisition of ionospheric data; VLF receiver/comparator (l6 KHz) for monitoring solar flares; in-house microcomputer facility; automatic geomagnetic observatory; small and medium range sounding rocket launching facilities; telemetry and tracking facility; I4 inches Cassegrain optical telescopes; mobile video optical system; Magnavox receivers; radio tracking receivers

Number of trainees: Between 15 and 20

Entry requirement: M.Sc. (Physics, Mathematics, Chemistry)

Degree/Diploma/Certificate awarded: Certificate

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: US$ 200

Monthly room and board and incidental expenses: US$ 500 per week

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Ionospheric physics and radio wave propagation

Geographical preference: Developing countries of the regions of the Economic and Social Commission for Asia and the Pacific (ESCAP) and the Economic and Social Commission for Western Asia (ESCWA)

SWEDEN

A. INSTITUTION

SWEDISH NATIONAL SPACE BOARD

Box 4006, S-171 04 Solna, Sweden

Telex: 17128 SPACECO S Tel.: 46 8 627 64 80
Fax: 46 8 627 5014

Contact person: --

Principal function(s) of institution: Central planning and funding agency for Swedish space activities

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: The Swedish space science programme concentrates on four areas: Magnetospheric and ionospheric physics, study of the upper atmosphere, astrophysics and material sciences, carried out at different institutes and university groups

Duration/Frequency/Language(s) of instruction: --/--/--

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --/--/--/--

Facilities: --

Number of trainees: --

Entry requirements: Ph.D.

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: Contact Swedish Institute, Box 7434, S-103 91 Stockholm

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Various at different institutes

Geographical preference: --

B. INSTITUTION

CHALMERS UNIVERSITY OF TECHNOLOGY, DEPARTMENT OF RADIO AND SPACE SCIENCE

Chalmers Univ. of Technology, S-412 96 Göteborg, Sweden

Telex: 854-2400 Tel.: 46-31810100 Cable: --

Contact person: Prof. J. Askne

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Space techniques for B.Sc. programmes
Research: Radioastronomical and geodetic applications

Duration/Frequency/Language(s) of instruction: 4 hrs a week, 7 weeks/once per year/Swedish, English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 100%/--/--/--

Facilities: Observatory with 20 x 25 m antennas equipped with receivers for 1-115 GHz

Number of trainees: Up to 2

Entry requirements: B.Sc.

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: No tuition but the number of foreign students is limited

Monthly room and board and incidental expenses: $US 350

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: Contact Swedish Institute, Box 7434, S-103 91 Stockholm

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Related to ongoing research activities as stated above

Geographical preference: --

C. INSTITUTION

ROYAL INSTITUTE OF TECHNOLOGY, ALFVEN LABORATORY, DEPARTMENT OF PLASMA PHYSICS

S-100 44 Stockholm, Sweden

Telex: 170 21 PLASMA Tel.: 46 8 790 7685 Cable: --

Contact person: --

Principal function(s) of institution: Research and Education

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Space physics (Undergraduate course)
Research: Space plasma physics, especially auroral and magnetospheric physics

Duration/Frequency/Language(s) of instruction:
2 Weeks/Annually/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 100%/--/--/--

Facilities: --

Number of trainees: --

Entry requirements: --

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: --

Geographical preference: --

D. INSTITUTION

SWEDISH INSTITUTE OF SPACE PHYSICS

Box 812, S-981 28 Kiruna, Sweden

Telex: 46 980 79050 Tel.: 46 980 79000 Cable: --

Contact person: Prof. B. Hultqvist

Principal function(s) of institution: Research and Education

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: Magnetospheric and ionospheric physics using satellite experiments for measurements of hot plasma and plasma waves, radar measurements of the ionosphere and optical measurements of upper atmosphere emissions, kinetic plasma theory

Duration/Frequency/Language(s) of instruction: --

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --

Facilities: Technical departments for building satellite experiments; calibration facilities, space simulator chamber, etc.; Incoherent scatter radar; Fabry-Perot interferometers and many other kinds of optical instruments; Sounding rocket range (ESRANGE) at a short distance

Number of trainees: up to 4

Entry requirements: B.Sc. in physics

Degree/Diploma/Certificate awarded: Ph.D. degrees

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: No fees

Monthly room and board and incidental expenses: Room and board not provided by Institute

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Yes. One or two.

Other financial support available for foreign participants: Yes, 150,000 - 200,000 SEK/year

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: --

Geographical preference: --

U G A N D A

A. INSTITUTION

DEPARTMENT OF METEOROLOGY

P.O. Box 7025, Kampala, Uganda

Telex: -- Tel.: 256-41-258537 Fax: 256-41-256166

Contact person: S.A.K. Magezi

Principal function(s) of institution: Research and training

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Basic meteorological sciences, covering the WMO, Class II, III and IV schedules
Research: Climate change studies: an analysis of temperature field and impact assessment

Duration/Frequency/Language(s) of instruction:
3 months/Annual/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 50%/20%/25%/5%

Facilities: Meteorological training school

Number of trainees: between 10 and 20

Entry requirements: Higher school certificate

Degree/Diploma/Certificate awarded: Professional

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Variable

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Study tours, research information exchange

Geographical preference: --

B. INSTITUTION

SURVEY TRAINING SCHOOL

P.O. Box 89, Entebbe, Uganda

Telex: -- Tel.: 20842 Cable: --

Contact person: Commissioner, Dept. of S & M, P.O. Box 1, Entebbe

Principal function(s) of institution: Training

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Astronomy and photogrammetry (at diploma level)
Research: --

Duration/Frequency/Language(s) of instruction:
2 years/Weekly/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 30%/--/70%/--

Facilities: --

Number of trainees: between 15 and 20

Entry requirements: Credit passes in English, Mathematics, Geography and Physical science

Degree/Diploma/Certificate awarded: Diploma

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: US$11,000 per student per year

Monthly room and board and incidental expenses: $1,000

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: --

Geographical preference: --

UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND

A. INSTITUTION

DUNDEE UNIVERSITY

Dundee DD1 4HN, Scotland, United Kingdom

Telex: 9312110826 DUG Tel.: 382 23181 Fax: 382-202830

Contact person: Dr. R.A. Vaughan

Principal function(s) of institution: Training and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: Physics and electronics first degree courses. Postgraduate courses in remote sensing. Research in remote sensing, surface physics, electronics

Duration/Frequency/Language(s) of instruction:
4 years/Annually/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 60%/35%/--/5%

Facilities: Fully equipped teaching laboratories, computing facilities

Number of trainees: Between 5 and 80

Entry requirements: High school qualifications

Degree/Diploma/Certificate awarded: B.Sc., M.Sc., Dip. Sc., Ph.D.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: B.Sc. - 2,500 British pounds (Home and EEC), 6,630 British pounds (Overseas); Dip. Sc. and M.Sc. - 2,104 British pounds (Home and EEC), 6,630 British pounds (Overseas) (1991-92 figures)

Monthly room and board and incidental expenses: 500 British Pounds

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Yes

Other financial support available for foreign participants: ODA/British Council; must be applied for in applicant's own country

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Environmental monitoring, mapping, education and research

Geographical preference: None

B. INSTITUTION

IMPERIAL COLLEGE, SPACE AND ATMOSPHERIC PHYSICS GROUP

Blackett Laboratory, Imperial College, London SW7 2BZ, United Kingdom

Telex: 929484 IMPCOL G   Tel.: (071) 589 5111 Ext. 6752   Fax: (071) 823 8250

Contact person: Prof. S.W.H. Cowley

Principal function(s) of institution: Education, research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: Research in space plasma physics, atmospheric physics and oceanography

Duration/Frequency/Language(s) of instruction:
3 years/Annually/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 10%/--/--/90%

Facilities: In-house microVAX cluster, workstations, personal computers; Laboratory for space instrumentation

Number of trainees: 3 for overseas students

Entry requirements: B.Sc. (Hons.)

Degree/Diploma/Certificate awarded: M.Phil., Ph.D.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Full time Postgraduate research - 2,000 British Pounds per annum (UK/EEC students), 6,300 British Pounds per annum (overseas students)

Monthly room and board and incidental expenses: 500 British Pounds (approx.)

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: ORS scheme reduces fees for selected overseas students to UK/EEC level; British Council scholarships

Other financial support available for foreign participants: Teaching assistantship

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Atmospheric physics; remote sensing; oceanography; climate change

Geographical preference: None

C. INSTITUTION

SILSOE COLLEGE

Silsoe, Bedford MK 45 4DT, England

Telex: 9312134058 SCG Tel.: (0) 525-60428
Fax: (0) 525-61527

Contact person: M.A. Keech

Principal function(s) of institution: Training, education, research and development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: A review of the basic science and related remote sensing is provided in all land resource planning and applied remote sensing courses. Radiometric data is collected using an advanced hand held radiometer and related to satellite data
Research: Use of aerial photography, microwave and multispectral data applied to agriculture, forestry and urban development. 12 to 14 M.Sc. theses are produced on various aspects of the subjects each year

Duration/Frequency/Language(s) of instruction: Short courses 1 to 12 weeks; Diploma-9 months; Ph.D.-3 years. English with possibility of instructions in Portuguese

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 35%/55%/5%/5% (for students)

Facilities: Mirror stereoscope, Interpretoscope, CP 1 Plotter, Radial line plotter, 2 GEMS Image Analyzers and vast resources of photographic and satellite hard copy, maps - through the Regional Centre of the National Remote Sensing Centre - CCT's of Landsat data. Many Desktop Image Analysers. 3 Tydac-SPAN GIS systems.

Number of trainees: 60

Entry requirements: For Diploma - a 2 ii hons., a lower qualification is acceptable for strongly motivated students. For M.Sc. a 1st or 2nd Class Hons.

Degree/Diploma/Certificate awarded: Yes

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Diploma - 7,700 British Pounds a year; M.Sc. - 10,600 British Pounds/year (excl. accommodation for non EEC students)

Monthly room and board and incidental expenses: On application; British Council award

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Usually British Council funds overseas students

Other financial support available for foreign participants: FAO, BC, ADB awards, Ford Foundation etc.

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Range recording, vegetation discrimination, crop survey, archaeological investigation.

Geographical preference: Brazil, Ethiopia, India, Kenya, Niger, Nigeria, Pakistan, Saudi Arabia, Sudan, Zimbabwe

D. INSTITUTION

UNIVERSITY OF LEICESTER, ASTRONOMY DEPARTMENT

University Road, Leicester, LE 1 7RH, United Kingdom

Telex: 341198 Tel.: 0533-554455 Cable: --

Contact person: Dr. R.F. Jameson

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Physics with astrophysics; mathematics with astronomy; combined studies astronomy
Research: Quasars and active galactic nuclei; infrared Astronomy; accretion in close binary systems; solar system studies

Duration/Frequency/Language(s) of instruction: Math/Ast. and Physics/Astrophysics- 3 terms/3 years/English; Com. Stud. Ast.- 3 terms/1 or 2 years/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: Math/Ast. and Com Stud. Ast.- 100%/--/--/--; Phys./Astro. - 80%/20%/--/--

Facilities: Teaching laboratories; research laboratory; small teaching observatory

Number of trainees: 25 combined studies, astronomy approx. 70

Entry requirements: For research - Class I or II degree "A" levels: Physics B; Mathematics B

Degree/Diploma/Certificate awarded: B.Sc. (Hons.) degree certificates (academic)

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: 7,000 British pounds

Monthly room and board and incidental expenses: 200 British pounds

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Research as in paragraph 1

Geographical preference: None

E. INSTITUTION

UNIVERSITY OF LEICESTER, DEPARTMENT OF PHYSICS AND ASTRONOMY

Dept. of Physics and Astronomy, University, Leicester, LE 1 7 RH, United Kingdom

Telex: -- Tel.: 0533-523509 Fax: 0533 550182

Contact person: Prof. K.A. Pounds, FRS

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Research: X-ray astronomy, earth observation, solar system

Facilities: Wide range of experimental equipment, test facilities, computing and expertise, built up over 25 years as an active Space Science Group

Number of trainees: Between 8 and 10 per year

Entry requirements: Degree (lst and 2nd class hons.) in Physics, Maths or Engineering

Degree/Diploma/Certificate awarded: Ph.D., M.Phil

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: 8,000 British pounds per year

Monthly room and board and incidental expenses: 300 British Pounds

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Research as in paragraph 1

Geographical preference: None

F. INSTITUTION

UNIVERSITY OF SURREY, CENTRE FOR SATELLITE ENGINEERING RESEARCH

Guildford GU 25XH, United Kingdom

Telex: -- Tel.: 483-509131 Fax: 483-34139

Contact person: Prof. B.G. Evans

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: M.Sc. programmes in satellite engineering, telematics, satellite communications engineering. Short one week courses. Research in satellite communications and spacecraft engineering.

Duration/Frequency/Language(s) of instruction: --/--/--

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --/--/--/--

Facilities: Satellite integration facility and testing; checkout and command system. Labs in DSP, speech processing, simulation, RF.

Number of trainees: Research; Max. 10/year

Entry requirements: 2 (i) B.Sc. or equivalent

Degree/Diploma/Certificate awarded: M.Sc., Ph.D. and Diploma

2. COSTS OF PROGRAMMES

Costs of tuition, texts and related research material: Fees (overseas) 6,500 British Pounds per year; maintenance 4,000 British Pounds per year

Monthly room and board and incidental expenses: 400 British Pounds

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: British Council; Commonwealth scholarships; University scholarships for research, ITU fellowships.

Other financial support available for foreign participants: Various

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Low cost satellites; applications of L.E.O. satellites; domestic and regional systems; satellite communications; speech processing

Geographical preference: None

G. INSTITUTION

ABERDEEN UNIVERSITY

Bedford Road, Aberdeen, AB9 2VE, United Kingdom

Telex: 73458 UNIABN G Tel.: 44-224-272778
Fax: 44-224-491179

Contact person: C.T. Spracklen

Principal function(s) of institution: Education, Research and Development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: --
Research: --

Duration/Frequency/Language(s) of instruction:
1 semester/Yearly/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 70%/20%/--/10%

Facilities: Workstations; satcom, simulation and experimental facilities

Number of trainees: up to 30

Entry requirements: appropriate first degree

Degree/Diploma/Certificate awarded: M.Sc., Ph.D.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: 6,000 British Pounds per year

Monthly room and board and incidental expenses: 300 British Pounds per month

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Yes, 10 available.

Other financial support available for foreign participants: Yes. Full cost of tuition and living expenses

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Satellite communications

Geographical preference: None

H. INSTITUTION

UNIVERSITY OF BRISTOL, DEPARTMENT OF AEROSPACE ENGINEERING

Queens Building, University Walk, Bristol BS8 1TR, England

Telex: 445938 BSUNIVG Tel.: 0272-303264
Fax: 0272-251154

Contact person: Mark Hempsell

Principal function(s) of institution: Education and Research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Space Technology Module on B. Eng. Course
Research: Small satellite production, space station architecture, space infrastructures; Rocket engine nozzles, materials for advanced launchers, space station habitability, hypersonic aerodynamics (including CFD); Hybrid rocket engines. Electric propulsion, spacecraft attitude sensors, spacecraft structures.

Duration/Frequency/Language(s) of instruction:
1-3 years/Yearly/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 100%/Discretionary-Decided on case by case basis

Facilities: Numerous Lecture Theatres and research laboratories; super computing network

Number of trainees: between 50 and 85

Entry requirements: B. Engl-Good school leaving, Postgraduate-Good Science, Maths or Engineering Degree.

Degree/Diploma/Certificate awarded: Academic-B.Eng., M.Sc. or Ph.D.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Varies

Monthly room and board and incidental expenses: Varies-not always available

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None, except normal ORS Scholarships for non-EEC students.

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Any of department's space interests

Geographical preference: Europe and North America - proactive. Elsewhere - will consider if asked.

I. INSTITUTION

UNIVERSITY OF KENT, PHYSICS LABORATORY

Canterbury, Kent, CT2 7NR, England

Telex: 965449 Tel.: (0) 227-764000
Fax: (0) 227-762616

Contact person: Dr. J. C. Zarnecki

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Undergraduate degree course "Physics with Space Science and Systems" leading to the B.Sc. degree
Research: Cosmic dust and space debris; planetary bodies; participation in Giotto, LDEF, Cassini, Ulysses, Galileo, CRAF, MARS '94, EURECA, etc. missions

Duration/Frequency/Language(s) of instruction: 3 year degree course/every year/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 65%/25%/--/10%

Facilities: Hypervelocity Dust Impact Facility; normal laboratory support (electronic and mechanical engineering); extensive computing, networking and library facilities

Number of trainees: up to 30

Entry requirements: For undergraduate entry, the equivalent of UK A level passes (2 minimum); for Postgraduate study, a good first degree at a recognized university

Degree/Diploma/Certificate awarded: B.Sc., M.Sc., M.Phil, Ph.D.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Undergraduate: UK and EEC-2,783 British Pounds p.a., Overseas-6,253 British Pounds p.a.; Postgraduate: UK and EEC-1,985 British Pounds p.a., Overseas-6,730 British Pounds p.a.

Monthly room and board and incidental expenses: 816-1,040 British pounds per academic year

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Yes, 1 available

Other financial support available for foreign participants: Yes. Approx. 7,850 British Pounds (Overseas Development Fund)

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: --

Geographical preference: None

J. INSTITUTION

UNIVERSITY OF MANCHESTER, NUFFIELD RADIO ASTRONOMY LABORATORIES

Jodrell Bank, Macclesfield, Cheshire, SK11 9DL, United Kingdom

Telex: 36149 Tel.: 0477 71321 Fax: 0477 71618

Contact person: Dr. R. J. Cohen

Principal function(s) of institution: Research and education

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: M.Sc. course in Radio Astronomy (1 year) (also registration for 3 year Ph.D. course in Radioastronomy)
Research: Radio astronomical studies of stars, pulsars, the galaxy, AGN, Radio galaxies, Quasars, Cosmology and the cosmic microwave background. High angular resolution studies using MERLIN and VLBI (including planning for space VLBI), the development of low noise RF receivers.

Duration/Frequency/Language(s) of instruction:
12 months/Annually, beginning 1st October/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 20%/30%/--/50%

Facilities: 76m Lovell telescope; Merlin Array; European VLBI Network (EVN); Data processing and image analysis facilities

Number of trainees: between 4 and 10

Entry requirements: Equivalent of UK second class honours Bachelor of Science Degree in Physics or related discipline

Degree/Diploma/Certificate awarded: Master of Science

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: EC students - 2,500 British Pounds; Others, 6,500 British Pounds
Monthly room and board and incidental expenses: Approx. 4,500 British Pounds/year

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: A small number of Research Studentships are available from the University of Manchester. They cover fees plus a living allowance. Competition is high.

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Radio Astronomical research

Geographical preference: None

K. INSTITUTION

UNIVERSITY OF NOTTINGHAM, INSTITUTE OF ENGINEERING, SURVEYING AND SPACE GEODESY

University Park, Nottingham, NG7 2RD, United Kingdom

Telex: 37346 UNINOT Gl Tel.: 0602-484848 Cable: --

Contact person: Dr. M. J. Smith

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: M.Sc. courses (full time-1 year, part time-2 years) in Engineering, surveying and geodesy; navigation studies; geographic information systems; International GPS seminar (annual). One week specialized courses on satellite navigation, engineering, surveying and geodesy.

Research: Satellite navigation and positioning systems; GPS; laser ranging to satellites; satellite orbit determination

Duration/Frequency/Language(s) of instruction: --/ Yearly/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: M.Sc. programme: 40%/10%/10%/40%; Short courses: 90%/10%/--/--

Facilities: GPS receivers (geodetic); Computer facilities and software (in-house)

Number of trainees: between 4 and 10

Entry requirements: M.Sc. programme - first degree (B.Sc.) or equivalent

Degree/Diploma/Certificate awarded: M.Sc., M.Phil., Ph.D.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: M.Sc. and research programmes: 2,104 British Pounds for home and EEC students; 6,630 British Pounds for overseas students. Short courses - approx. 100 British Pounds per day

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: Yes

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: --

Geographical preference: --

L. INSTITUTION

SOUTHAMPTON UNIVERSITY

Highfield, Southampton, United Kingdom

Telex: 47661 Tel.: 0703 593516 Cable: --

Contact person: Dr. A. R. L. Tatnall

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Space system and technology: 2 or 1 week course for people in industry. It gives a broad view of the spacecraft as a system made up of a number of subsystems working in harmony. Lectures on all aspect of spacecraft are given by University staff and outside speakers. A project is a major element of the 2 weeks course.
Research: --

Duration/Frequency/Language(s) of instruction: 2 weeks/ 2 courses every year/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 50%/--/50%/--

Facilities: --

Number of trainees: between 15 and 45

Entry requirements: Graduates

Degree/Diploma/Certificate awarded: Certificate

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Varies on response/course type

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: --

Geographical preference: --

UKRAINE

A. INSTITUTION

KIEV UNIVERSITY, DEPARTMENT OF ASTRONOMY

Glushkov prospect 6, 252022, Kiev, Ukraine

Telex: 131406 SKY SU Tel.: (044) 266-45-07 Cable: --

Contact person: Prof. N. Ya. Kotsarenko

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: Active experiments in the ionosphere and magnetosphere with electron and plasma beams, Ba clouds, Optical observations and simulations. Space Physics course for students.

Duration/Frequency/Language(s) of instruction: Year/Permanent/Russian

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --

Facilities: Theoretical support of active space experiments. Optical observations of phenomena related to the experiments.

Number of trainees: --

Entry requirements: Higher education

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Active space experiments

Geographical preference: None

B. INSTITUTION

N. G. KHOLODNY INSTITUTE OF BOTANY OF THE ACADEMY OF SCIENCES OF UKRAINE

Repin Str. 2, 252601 Kiev-4, Ukraine

Telex: -- Tel.: 224-40-41, 212-32-36 (044) Cable: --

Contact person: Elizabeth L. Kordyum, Alexander I. Vasilenko

Principal function(s) of institution: Research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: Space biology, gravitational biology, cell biology, space radiobiology - cell effects of High-LET particles

Duration/Frequency/Language(s) of instruction: --

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --/--/10%/90%/

Facilities: Modern equipment and methods for studying plant cell biology and for simulating microgravity

Number of trainees: between 2 and 5

Entry requirements: --

Degree/Diploma/Certificate awarded: Yes

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Yes, 2 available.

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Gravitational biology and space radiobiology. Investigations into cell, subcellular and molecular levels.

Geographical preference: --

UNITED STATES OF AMERICA

A. INSTITUTION

COLUMBIA UNIVERSITY

New York, N.Y. 10027, United States of America

Tel.: (212) 678-5500 Cable: --

Contact person: Anthony D. Del Genio, Institute for Space Studies, 2880 Broadway, N.Y., N.Y. 10025

Principal function(s) of institution: Education and academic research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Introduction to atmospheric science - basics of atmospheric hermodynamics, cloud physics, radiation and dynamics; applications to Earth's climate and other planets. Planetary fluid dynamics - study of motions of fluid envelopes of planets in response to effects of rotation, pressure gradients, and diabetic forcing.
Research: Modelling of clouds, thermal structure and dynamics of the atmospheres of Venus, Jupiter, Titan and Saturn

Duration/Frequency/Language(s) of instruction: Semester/Annually/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 100%/--/--/--

Facilities: Amdahl 5870, IBM 4381 computers; IBM RISC 6000 workstations; IBM 7350 image display system; library of Pioneer Venus, Voyager Jupiter tapes

Number of trainees: Up to 2

Entry requirements: Background in physics and mathematics (advanced); knowledge of FORTRAN

Degree/Diploma/Certificate awarded: M.Sc.; Ph.D.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: $US 16,472 a year

Monthly room and board and incidental expenses: $US 450

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: Graduate research assistantships

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: --

Geographical preference: None

B. INSTITUTION

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION (NASA)

Washington, DC 20546

Telex: 89530 NASA Tel.: 202-453-1000 Cable: --

Contact person: Dr. Chester McKee, Director, Associateship and Fellowship Programs, National Research Council (NRC), 2101 Constitution Avenue, Washington, DC 20418

Principal function(s) of institution: Scientific and technical research in the fields of aeronautics and space exploration

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: None
Research: Resident Research Associateships (RRA) as guest investigators in laboratories at seven NASA Research Centers and the Jet Propulsion Laboratory. Advanced basic research is in all areas of space science and technology, with particular topics identified in yearly brochures published by and available from the NRC

Duration/Frequency/Language(s) of instruction:
1 year/Continuous/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 0%/Variable/Variable/Variable

Facilities: Full range of laboratory, field and space equipment

Number of trainees: Approximately 200 U.S. and foreign trainees per year for all areas of aeronautical and space research

Entry requirement: Ph.D. or equivalent

Degree/Diploma/Certificate awarded: None

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: None

Monthly room and board and incidental expenses: Varies with location. Lodging and subsistence arranged by awardee. Stipend payment provides resources for self support

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Associateship opportunities for foreign participants: Available through NRC. Number varies, but approximately 80 per year in the last few years

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: All areas of space science

Geographical preference: None

C. INSTITUTION

UNIVERSITY OF WASHINGTON, DEPARTMENT OF AERONAUTICS AND ASTRONAUTICS

Dept. FS-10, Seattle, WA 98195, United States

Telex: -- Tel.:(206)543-1950 Cable: --

Contact person: Prof. A. Hertzberg, Aeronautics and Astronautics Research Laboratory FL-10

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Undergraduate courses (towards BSSA): orbit mechanics, gas physics, space system design, control theory, propulsion. Graduate courses (towards Master of Science, Master of Engineering, Ph.D.) radiation gas dynamics, space manufacturing, energy conversion, space propulsion, composite materials, gas lasers
Research: Sponsored research: energy conversion systems in space (NASA), solar pumped lasers (NASA), ultra high speed projectiles (USAF), free electron lasers (ONR)

Duration/Frequency/Language(s) of instruction:
1-5 years/Annually/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 20-100%/--/--/0-80%

Facilities: Various engineering physics laboratories, light gas gun facility

Number of trainees: Between 6 and 12

Entry requirements: Engineering/Science degree

Degree/Diploma/Certificate awarded: B.Sc. in Aeronautics and Astronautics; M.Sc. in Aeronautics and Astronautics; Master of Engineering; Ph.D.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: University of Washington tuition varies with residency status and level of study

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Very few besides teaching and research assistantships

Other financial support available for foreign participants: Teaching assistantships, research assistantships

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Same areas mentioned in summary of courses and research activities

Geographical preference: None

D. INSTITUTION

UNIVERSITY OF ALASKA, GEOPHYSICAL INSTITUTE AND PHYSICS DEPARTMENT

University of Alaska, Fairbanks, AK 99775-0800 United States

Telex: 35414 Geoph Inst. FBK Tel.: (907) 474-7282

Contact person: Director, Geophysical Institute

Principal function(s) of institution: Research and education

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: Magnetospheric physics; atmospheric dynamics; space physics; methods of numerical simulation: plasma physics; auroral physics; aeronomy

Duration/Frequency/Language(s) of instruction: Semester/Annually/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: Depends on course and research work

Facilities: --

Number of trainees: Up to 5

Entry requirements: B.S. in Physics, Space Physics, Atmospheric Sciences

Degree/Diploma/Certificate awarded: M.Sc. and Ph.D. degrees

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: $US 1,300 per semester

Monthly room and board and incidental expenses: $US 1,200 per semester

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: Research and teaching assistantship

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: All aspects of space physics and atmospheric sciences

Geographical preference: Most aspects of interest deal with high-latitude problems (Arctic and Antarctica)

E. INSTITUTION

UNIVERSITY OF IOWA, DEPARTMENT OF PHYSICS AND ASTRONOMY

Iowa City, Iowa 52242, United States

Telex: 910-525-1398 Tel.: 319/335-1689
Fax: (319) 335-1753

Contact person: Dwight Nicholson

Principal function(s) of institution: Education and basic research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: Magnetospheric physics of the Earth and other planets, space plasma physics, cosmic rays and solar energetic particles, interplanetary medium, ionosphere of the Earth

Duration/Frequency/Language(s) of instruction:
2 semesters/Alternate years/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 25%/--/--/75%

Facilities: Extensive facilities (a) for design, construction, and testing of space qualified scientific instruments and complete satellites; and (b) for computer reduction, analysis and display of space data, including national computer network

Number of trainees: Up to 20

Entry requirements: B.S. or B.A. in physics, astronomy, mathematics and personal references

Degree/Diploma/Certificate awarded: M.Sc. or Ph.D.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: $US 3,000 per year for research assistants

Monthly room and board and incidental expenses: $US 450

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: 20 research assistantships available at $US 12,000 per academic year.

Other financial support available for foreign participants: Foreign student scholarships at about $US 2,000 a year in addition to research assistantship

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Same areas mentioned as in summary of courses and research activities

Geographical preference: --

F. INSTITUTION

ZONTA INTERNATIONAL (AMELIA EARHART FELLOWSHIPS)

557 W. Randolph St., Chicago IL 60661-2206

Telex: 190200 UTZONTA Tel.: (312) 930-5848
Cable: ZONTA CHICAGO Fax: (312) 930-0951

Contact person: Bonnie Koenig, Exec. Dir.

Principal function(s) of institution: Zonta International is a world-wide classified service organization of over 40,000 executive women in business and the professions (in Zonta Clubs in 53 countries) with commitment to the development and training of women for leadership positions. In this connection, it grants annually ZONTA Amelia Earhart Fellowship Awards to women for graduate studies. Zonta International has consultative status with UNICEF, ECOSOC, UNESCO, ILO and the Council of Europe

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: The fellowships are awarded for graduate studies in aerospace related science and engineering including aspects of natural and physical sciences. The courses to be followed will depend on both the background and interest of fellow and available opportunities at the institution accepting fellow

Duration/Frequency/Language(s) of instruction: Vary. This depends on the academic institution where the fellowship recipient will pursue her studies as well as the programme of studies being undertaken by fellow

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: See description above

Facilities: See description above

Number of trainees: From 25 to 30 each year

Entry requirements: (a) Minimum of Bachelor's degree in a science (natural or physical) for advanced study and research as described under summary of courses etc. above. (b) A superior academic record and evidence of potential, and (c) An acceptance by an institution offering fully accredited courses and degrees in areas described under summary of courses etc. above

Degree/Diploma/Certificate awarded: See description under duration/frequency above

2. COSTS OF PROGRAMMES

Costs of tuition, texts and related research material: See item 3 below

Monthly room and board and incidental expenses: See item 3 below

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Each of the fellowship awards amount to US$6,000 for use for the recipients' studies

Other financial support available for foreign participants:

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: –

Geographical preference: Applications for the fellowship awards for graduate studies may be made by women world-wide and must be completed and submitted with requested materials before 1 January of any year. Fellowships may be used at any institution offering accredited courses in the applicant's area of study in the following year's term

II

REMOTE SENSING

ARGENTINA

INSTITUCION

COMISION NACIONAL DE ACTIVIDADES ESPACIALES

Av. Dorrego 4010/18 (1425), Buenos Aires, Argentina

Fax:541-774-5703 Teléfono:774-9310, 771-5810

Persona a contactar: Dr. Jorge Sahade

Funciones principales de la institución: Asesoramiento al P.E.N. en materia espacial. Coordinación de la actividad espacial en la Argentina

1. PROGRAMAS ACADEMICOS Y CIENTIFICOS

Lista de cursos y actividades de investigación:
Cursos: Aplicación de la teleobservación en la enseñanza de la geografía, curso nacional de sensores remotos, curso regional para América Latina sobre aplicaciones de la teleobservación en la evaluación de los recursos naturales
Proyectos:
-Desarrollo e implementación de métodos para corrección geométrica con minimización de puntos de control
-Desarrollo de métodos de clasificación automática no supervisada y supervisada para reducción del tiempo de cálculo de precisión
-Aplicación de técnicas de reconocimiento de formas en la registración de imágenes de la superficie terrestre
-Adaptación de las facilidades para procedimientos de cintas de alta densidad al sistema PI
-Desarrollo de método de comparación de datos para almacenamiento
-Desarrollo de un sistema para presentación en pantalla de imágenes de alta resolución
-Desarrollo de un sistema de procesamiento de señales analógicas
-Desarrollo de una interfase de hardware y software para el funcionamiento del sistema de desplique de imágenes en desarrollo en el Centro Espacial Sensores Remotos una en microcomputadora COMMODORE PET
-Desarrollo de un sistema de digitalización de imagenes de alta resolución
-Desarrollo de una interfase de hardware y software para el funcionamiento del sistema de despliegue de imágenes en desarrollo en el Centro Espacial Sensores Remotos una en computadora VAX II/780
-Desarrollo de un sistema para evaluación de vehículos lanzadores de satélite mediante el use de la computadora

-Evaluación de análisis automático de textura para incrementar la precisión de la clasificación con datos SPOT

Duración/Frecuencia/Idioma(s) de ensenanza:
1-4 semanas/Según el curso/Español

Distribución del tiempo en Trabajo en clase/Laboratorio/Trabajo en el terreno/Investigaciones independientes: --/--/--/--

Tipo de servicios o instalaciones: Software y hardware completo para análisis digital de imágenes Landsat, equipo de apoyo terrestre y avión equipado

Número de participantes: Entre 5 y 10

Calificaciónes académicas (mínimas) requeridas: Grado de disciplinas afines a la especialidad

Certificados o diplomas extendidos por la institución: Certificados

2. COSTO DE LOS PROGRAMAS

Costo de los cursos, de los libros de texto, y de los materiales de investigación afines: $US 500 por persona

Gastos mensuales de alojamiento y manutención y gastos menudos: --

3. DISPONIBILIDAD DE BECAS

Disponibilidad de becas para participantes extranjeros: Variable segun el caso

Otra posibilidades de ayuda financiera para participantes extranjeros:
Alojamento con tarifas preferenciales en el Centro Espacial San Miguel

4. COLABORACION CON LOS PAISES EN DESARROLLO: Si

Esfera de interés: Formación de recursos humanos, intercambio de tecnologias espaciales, asesoramiento, diseño de proyectos

Region geográfica determinada: Con todas las regiones

A U S T R A L I A

A. INSTITUTION

AUSTRALIAN NATIONAL UNIVERSITY, RESEARCH SCHOOL OF PACIFIC STUDIES

G.P.0. Box 4, Canberra, ACT 2601, Australia

Telex: AA 62694 SOPAC Tel.: 495111 Cable: NATUNIV

Contact person: Dr. Jim Bowler

Principal function(s) of institution: Tertiary education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: --
Research: Analysis of arid zone landforms and sedimentary deposits in desert environments, including aeolian systems in relation to present and past environments

Duration/Frequency/Language(s) of instruction:
2-4 years/Variable/English

Allocation of time spent in Classroom/Laboratory/field Work/Independent Research: Determined for each individual student

Facilities: Sedimentary laboratory

Number of trainees: 1

Entry requirements: B.Sc. or M.Sc. in relevant fields

Degree/Diploma/Certificate awarded: Ph.D.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Tuition fees nil at present; research and field work cost depends on particular topic of research approved for each student

Monthly room and board and incidental expenses: Variable

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Fellowship/scholarships available (variable)

Other financial support available for foreign participants: ANU Ph.D. - scholarships

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Geomorphology of deserts

Geographical preference: --

B. INSTITUTION

AUSTRALIAN NATIONAL UNIVERSITY, RESEARCH SCHOOL OF PHYSICAL SCIENCES

G.P.0. Box 4, Canberra ACT 2601, Australia

Tel.: 616 249-2467 Fax: 616 249-1884 Cable: NATUNIV

Contact person: Dr. I.D.G. Macleod

Principal function(s) of institution: Research and postgraduate education

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Research: Digital image analysis of remotely sensed data, oceanographic applications

Duration/Frequency/Language(s) of instruction: 3 to 4 years/Occasional/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --/--/--/100%

Facilities: Extensive research facilities including computer and specialized peripheral facilities for operating on digital image data

Number of trainees: Between 1 and 3

Entry requirements: Honours/Masters degree in Physics, Computer Science, Electrical Engineering

Degree/Diploma/Certificate awarded: Research students are candidates for the Ph.D.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: $A 11,000 per annum.

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: EMSS/OPRA scholarships

Other financial support available for foreign participants: Graduate student assistanceship on a competitive basis - $A 5,000 a year

4. COLLABORATION WITH DEVELOPING COUNTRIES: None

Specific areas of interest: --

Geographical preference: --

C. INSTITUTION

JAMES COOK UNIVERSITY OF NORTH QUEENSLAND, DEPARTMENT OF GEOGRAPHY

Post Office, Townsville, Qld. 4811, Australia

Tel.: 077814111

Contact person: Prof. Hopley, Department of Geography

Principal function(s) of institution: --

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: Environmental remote sensing; ecological modelling; environment decision support systems; GIS

Duration/Frequency/Language(s) of instruction: Remote sensing-9 hours per student a week; GIS-9 hours per student a week

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: Geography: 30%/40%/5%/25%

Facilities: Computer laboratory-network of 15 machines and peripherals supporting GIS, database and image analysis software

Number of trainees: 70 (2nd year), 40 (3rd year), 14 (postgrad.)

Entry requirements: 1st year science (for 2nd year); 2nd year remote sensing and GIS (for 3rd year)

Degree/Diploma/Certificate awarded: M.Sc., Ph.D., Diploma

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: A$10,100 p.a.

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Coral reef management; landuse management and aquaculture

Geographical preference: Tropical region - SE Asia and SW Pacific

D. INSTITUTION

MACQUARIE UNIVERSITY

North Ryde, N.S.W. 2113, Australia

Telex: MACQUNI AA22377 Tel.: (02) 888-8000

Contact person: Prof. R.E. Aitchison, School of Mathematics and Physics

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: --
Research: Surface temperature contours

Duration/Frequency/Language(s) of instruction: --/--/--

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --/--/--/--

Facilities: Fixed 6M GMS-3 installation. High Resolution S-Band. Tracking 4M Dish, NOAA-TIROS S-Band

Number of trainees: Up to 2 per year

Entry requirements: B.Sc. or B.E.E.

Degree/Diploma/Certificate awarded: M.Sc.

2. COSTS OF PROGRAMMES

Costs of tuition, texts and related research material: --

Monthly room and board and incidental expenses: Approx. $A 600 suggested minimum

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: 6 postgraduate scholarships per year

Other financial support available for foreign participants: Visiting fellowships for senior scholars -- airfare plus 8 weeks' living allowance

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Surface temperature profiles, fisheries, environmental pollution, rainfall, floods

Geographical preference: --

E. INSTITUTION

UNIVERSITY OF NEW SOUTH WALES, CENTRE FOR REMOTE SENSING

P.0. Box 1, Kensington 2033, New South Wales, Australia

Telex: AA26054 Tel.: 61-2-697-4964
Fax: 61-2-6622087

Contact person: Professor B.C. Forster (Director)

Principal function(s) of institution: Training, education, research and development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Remote sensing courses Master's Degree (1 year full time, 2 years part time); Graduate Diploma in Remote Sensing (1 year full time, 2 years part time); Range of short courses in image analysis, principles of remote sensing and application areas. Tailored short courses have also been conducted in a number of Asian countries
Research:
-Synthetic Aperture Radar Research (SIR-B), geology, mapping information extraction, urban monitoring, soil moisture, arid land applications, microwave properties,
-Analysis of high resolution spaceborne visible and near infra-red images (SPOT, LANDSAT TM, Large Format Camera) for medium scale mapping, urban monitoring and input to land information systems,
-Integration of remote sensing and other data sources,
-Bushfire monitoring,
-Forest assessment,
-Rice monitoring,

-Classification procedures,
-Atmospheric correction using reference surfaces,
-Hydrographic and bathometric mapping,
-Remote sensing input to geographic information systems,

Duration/Frequency/Language(s) of instruction: 1 yr full time, 2 yrs part time, 2-5 days (short courses)/10 per year/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research:

	Classroom	Lab	Field work	Independent Research
Masters	50%	20%	10%	20%
Grad.dipl.	60%	30%	10%	--
Short courses	70%	30%	--	--

Facilities: Remote sensing laboratory: Dipix Aries II Image Analysis System; Meridian Image Analysis System; A-Image System; colourwrite facility; co-ordinate digitizer; wide range of satellite digital images. ERDAS/ARC INFO laboratory with 16 SUN stations.

Number of trainees: Postgraduate programmes - Between 10 and 20; Short courses - Between 10 and 30

Entry requirements: Masters - 4 yrs degree, Diploma - 3 yrs degree; Short course - professional experience

Degree/Diploma/Certificate awarded: Master of Engineering Science (Remote sensing), Master of Applied Science (Remote sensing), Graduate Diploma in Remote Sensing

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Postgraduate programmes require entry visa fee or full fee payment, university costs and textbooks $A 250; short courses $A 120 per day

Monthly room and board and incidental expenses: $A 800

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Technology transfer, short courses, landuse mapping and monitoring, coastal and near shore monitoring, all aspects of remote sensing research

Geographical preference: Asia, South Pacific

F. INSTITUTION

UNIVERSITY OF MELBOURNE, METEOROLOGICAL DEPARTMENT

Parkville, Victoria, 3052, Australia

Telex: AA35185 Tel.: (03) 3446912

Contact person: Dr. R. Lile

Principal function(s) of institution: Research and education

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Course work: Course work covering the physical principles of acoustic, optical, infra-red and radio remote sensing of the atmosphere
Research: Research in this area is confined essentially to applications of remote sensing, rather than development of new remote sensing techniques

Duration/Frequency/Language(s) of instruction: 8 weeks/One per year/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 40%/30%/30%/--

Facilities: Direct read-out of polar-orbiting and geostationary satellite imagery (at low resolution). High resolution imagery and digitized radiance values are obtainable from the Commonwealth Scientific and Industrial Research Organization, Atmospheric Research Division in Melbourne

Number of trainees: Between 1 and 5

Entry requirements: Second year university level (mathematics or physics)

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Full-time overseas students are currently charged tuition fees of approx. $A 1,500 per year

Monthly room and board and incidental expenses: Approx. $A 180

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Any research fields specified in summary of courses and research activities

Geographical preference: Southern hemisphere

G. INSTITUTION

UNIVERSITY OF TASMANIA

Dept. of Geography, Box 252 C GPO, Hobart, Tasmania 7001, Australia

Telex: 58150 UNTAS Tel.: 202101 Cable: TASUNI

Contact person: Dr. M. Nunez

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Undergraduate course that examines the nature of radiation in the atmosphere, radioactive properties of earth surfaces and imagery systems. Course includes application of remote sensing techniques to projects in the fields of resources inventory, land use mapping and environmental monitoring

Research: includes examination of sea surface temperatures, evapotranspiration, forest inventories and theoretical aspects of interpolation. Work in solar energy, climatology, forestry, possible oceanographic aspects

Duration/Frequency/Language(s) of instruction:
18 weeks/Annually/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 60%/30%/--/10%

Facilities: Control image processing system

Number of trainees: Between 8 and 20

Entry requirements: 2nd year undergraduate science or surveying subjects

Degree/Diploma/Certificate awarded: None

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: No tuition fees. However, the Australian Government's overseas student's charge applies (currently $A 3,500 per year)

Monthly room and board and incidental expenses: Min. $A 500

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Up to 8 scholarships each year are available

Other financial support available for foreign participants: Various bilateral assistance schemes are possible: e.g. Colombo Plan, South Pacific Aid programme, Malaysia Scholarship, Mara Scholarship

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Mapping of natural resources, particularly vegetation. Solution of climatological problems (e.g., pollution)

Geographical preference: None

H. INSTITUTION

CANBERRA COLLEGE OF ADVANCED EDUCATION
P.0. Box 1, Belconnen, A.C.T. 2616, Australia

Telex: 62267 Tel.: 062-522111 Cable: COLLADVED

Contact person: Mr. W. Wasserman

Principal function(s) of institution: Education

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Undergraduate and graduate courses
Research: Optical and radiowave research. Digital filtering and precision geometric rectification of image data

Duration/Frequency/Language(s) of instruction: Semester/Annually/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 5 hrs per week/7 hrs per week/--/16 hrs per week

Facilities: Satellite data acquisition systems. Photogrammetric: Wild A7, Zeiss Planimat. Image Processing: HP1000-based system. Reprographic facilities

Number of trainees: Up to 4

Entry requirements: Normal college entry requirements for degree course. Degree in relevant area of science and technology. Degree in relevant advanced computing by E.D.P.

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: College fees

Monthly room and board and incidental expenses: College fees if resident on campus

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Remote sensing satellite technology; resource inventories

Geographical preference: Pacific Basin preferred, but not exclusively

I. INSTITUTION

ROYAL MELBOURNE INSTITUTE OF TECHNOLOGY, DEPARTMENT OF LAND INFORMATION

124 La Trobe St., Melbourne, Victoria, Australia 3001
GPO Box 2476V, Melbourne, Victoria, Australia 3001

Telex: AA36406 Tel.: (03) 660-2213
Fax: (03) 663-2517 Cable: "MELTECH" MELBOURNE

Contact person: Mr. N.F. Edwards, Department of Land Information

Principal function(s) of institution: Education and applied research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Bachelor of Land Information (in Surveying or Cartography); Graduate Diploma in Land Data Management; Master of Land Data Management by coursework; Master of Applied Science by research; Ph.D.; relevant short courses.

Duration/Frequency/Language(s) of instruction: B. Land Inf. - 4 years/Annually/English; Grad.Dip. - 1 year/Annually/English; M. App. Sci - 2 years/annually/English; M. Land Data Man. - 1.5 years/Annually/English; Ph.D. - 3 years/Annually/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 60%/15%/15%/10%

Facilities: Microbrian Digital Analysis facility; Intergraph computer-aided mapping system; Microstation computer-aided mapping system; GPS satellite positioning equipment

Number of trainees: Variable

Entry requirements: For undergraduate degree - university entrance level in mathematics; for postgraduate diploma and higher degrees - under-graduate degree in Science, Engineering or other related discipline

Degree/Diploma/Certificate awarded: Ph.D., M. App. Sci., M.L.D.M., B. Land Inf./Grad.Dip.Land.Dat.Man.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: On application (variable)

Monthly room and board and incidental expenses: $A 850

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Australian Government Equity and Merit Scholarships.

Other financial support available for foreign participants: Possibility of some tutoring/teaching duties for postgraduate students

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Mapping, land information management, education, satellite positioning

Geographical preference: None

J. INSTITUTION

ROYAL MELBOURNE INSTITUTE OF TECHNOLOGY, RMIT CENTRE FOR REMOTE SENSING

124 La Trobe St., Melbourne, Victoria, Australia 3001
GPO Box 2476V, Melbourne, Victoria, Australia 3001

Telex: AA36406
Tel.: (03) 660-2213
Fax: (03) 663-2517
Cable: "MELTECH" MELBOURNE

Contact person: Mr. N.F. Edwards, Department of Land Information

Principal function(s) of institution: Education and applied research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Bachelor of Land Information (in Surveying or Cartography); Graduate Diploma in Land Data Management; Master of Applied Science; Doctor of Philosophy

Duration/Frequency/Language(s) of instruction: B. Land Inf.- 4 years; Grad. Dip - 1 year; M. App. Sci. - 2 years/annually/English; Ph.D. - 3 years/annually/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 60%/15%/15%/10%

Facilities: Microbrian Digital Analysis facility; Intergraph computer-aided mapping system; Microstation computer-aided mapping system; GPS satellite positioning equipment

Number of trainees: Variable

Entry requirements: For undergraduate degree - university entrance level in mathematics; for postgraduate diploma and Master degree - under-graduate degree in Science, Engineering or other related discipline

Degree/Diploma/Certificate awarded: Ph.D., M. App. Sci., B. Land Inf./Grad.Dip.Land.Dat.Man

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Variable

Monthly room and board and incidental expenses: $A 850

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Australian Government Equity and Merit Scholarships

Other financial support available for foreign participants: Possibility of some tutoring/teaching duties for postgraduate students

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Mapping, land information management, remote sensing education

Geographical preference: None

AUSTRIA

A. INSTITUTION

INSTITUT FUR NACHRICHTENTECHNIK UND WELLENAUSBREITUNG

Inffeldgasse 12, A-8010, Graz, Austria

Telex: 31221 Tel.: 316 7061/7441

Contact person: Prof. W. Riedler

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Radar techniques
Research: Development of special radar equipment

Duration/Frequency/Language(s) of instruction: 2 hrs a week/Every summer semester/German

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 20%/20%/--/60%

Facilities: Radar station, computers

Number of trainees: Between 1 and 2

Entry requirements: Bachelor, Master's degree preferred

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: $5,000 approx.

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: 2 fellowships per year offered under the auspices of the United Nations Programme on Space Applications

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Remote sensing

Geographical preference: None

B. INSTITUTION

AUSTRIAN SPACE AGENCY (ASA)

Garnisongasse 7, A-1090 Vienna, Austria

Telex: 116560 ASA A
Fax: 43-1-4282280
Tel.: 43-1-40381770
Cable: ASASPACE WIEN

Contact person: --

Principal function(s) of institution: Administration and coordination

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: ASA is organizing workshops and summer schools together with other space organizations annually in the fields of space science and its applications, including remote sensing. No formal course work is scheduled.

Duration/Frequency/Language(s) of instruction: 10 days/each year/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 70%/30%/--/--

Facilities: Congress House

Number of trainees: about 60

Entry requirements: M.Sc. or Ph.D.

Degree/Diploma/Certificate awarded: None

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Registration fee (approx. US$250)

Monthly room and board and incidental expenses: N/A

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Remote sensing and space science

Geographical preference: None

BANGLADESH

INSTITUTION

BANGLADESH SPACE RESEARCH AND REMOTE SENSING ORGANIZATION (SPARRSO)

Sher-E-Bangla Nagar, Agargaon, G.P.0. Box 529, Dhaka, Bangladesh

Telex: 642215 Tel.: 313329
313317 Cable: SPARRSO

Contact person: Dr. M.A.H. Pramanik, Director

Principal function(s) of institution: Research, development and training

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Basic principles of remote sensing. Use of aerial photographs and satellite imagery for various applications. Analysis and interpretation of remotely sensed data both by visual and digital techniques
Research: Use of remotely sensed data for resource management, survey and disaster monitoring

Duration/Frequency/Language(s) of instruction: Variable/Variable/Variable

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 50%/30%/10%/10%

Facilities: Meteorological satellite and LANDSAT/SPOT ground station, DCP computers. Image processing systems and other remote sensing equipment

Number of trainees: Between 30 and 50

Entry requirements: Science/Engineering graduate

Degree/Diploma/Certificate awarded: Professional degree

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Variable

Monthly room and board and incidental expenses: $US 60 per day

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Agriculture, water resources, fisheries, meteorology, oceanography, forestry

Geographical preference: Preferably with neighbouring countries

BELGIQUE

A. ETABLISSEMENT

UNIVERSITE CATHOLIQUE DE LOUVAIN

Place de l'Université, lB-1348, Louvain-la-Neuve, Belgique

Télex: 59516/UCL.AC Téléphone: 010/43.21.11

Responsable: Prof. J. Wilmet, UCL, Unité de Geographie, Pl.du Levant 3, Louvain-la-Neuve, Tel. 32-10-472873

Vocation(s) principale(s) de votre établissement: Enseignement, recherche et dévéloppement

1. PROGRAMMES DE CULTURE GENERALE ET SCIENTIFIQUES

Description des cours et activités de recherche:
Télédétection; sémantique de la photointerprétation, techniques spéciales de télédétection, propagation et rayonnement, hyperfréquences, systèmes de communications, séminaire de télécommunication et d'hyperfréquences, transmission de donnes et téléinformatique

Durée/Fréquence/Langue(s) d'enseignment: La durée dépend des sujets traités et des préalables acquis par l'étudiant/--/français

Répartition du temps alloué en Salle de classe/Laboratoire/Travail sur le terrain/Recherche indépendante: La répartition exacte dépend des sujets. On peut dire que le travail se repartit environ en trois tiers égaux entre le travail théorique en classe, le travail expérimental et le travail indépendant

Moyens dont dispose établissement pour exécuter les programmes: L'Université dispose d'une équipe de recherche experimentée et de moyens expérimentaux adéquats

Nombre de participants: Entre 10 et 20

Critères régissant l'admission: Le niveau dépend des cours choisis. Les critères ne peuvent donc pas être définis en général

Certificats ou diplômes obtenus: Les diplômes peuvent être, le cas échéant, licence spéciale en sciences physiques, licence en géographie appliquée, ingenieur civil en télécommunication, certificat de spécialisation, licence en sciences appliquées, maîtrise, doctorat

2. COUT DES PROGRAMMES

Frais de scolarité, manuels et autres matériaux de recherche: On peut considerer que le coût global d'une année d'études s'élève à environ FB 175.000 par un pour un célibataire. Ce montant comprend le droit d'inscription: FB 11.600 et le logement: environ FB 4.500 par mois

Frais mensuels de logement et de subsistance et faux frais: --

3. POSSIBILITES DE BOURSES D'ETUDES OU DE PERFECTIONNEMENT

Possibilités de bourses d'études ou de perfectionnement pour des participants étrangers: L'UCL octroie chaque année quelque 20 bourses à des ressortissants du tiers-monde qui entament des études de postgraduat. Le montant mensuel de la bourse s'élève à FB 16.500 pour un célibataire. Le Centre social niversitaire dispense dans certains cas une aide financière en cours d'année

Existence d'autres possibilités d'octroi d'une aide financière pour participants étrangers: Des bourses peuvent également être obtenues auprès de l'Administration générale de la coopération au développement à Bruxelles ainsi qu'auprès du Commissariat général aux relations internationales, également situé à Bruxelles, via le poste diplomatique belge à l'étranger. Enfin, des bourses sont disponibles auprès d'organismes internationaux tels que l'UNESCO, la CEE, etc. Les conditions et le montant de ces bourses, variables selon les organismes, peuvent être obtenus auprès de ceux-ci

4. COLLABORATION AVEC PAYS EN DEVELOPPEMENT: Oui

Domaines qui vous intéressent: Les domaines cites au point ci-dessus

Préférence géographique: Aucune

B. ETABLISSEMENT

UNIVERSITE DE LIEGE

Place du 20 Août, 7, 4000 Liège, Belgique

Télex: UNIVULG 41397 Tél: 041/42.00.80

Responsable: Prof. Jacques C.J. Nihoul, B5, Sart Tilman, B-4000 Liège

Vocation(s) principale(s) de votre établissement: Enseignement, recherche et développement

1. PROGRAMMES DE CULTURE GENERALE ET SCIENTIFIQUES

Description des cours et activités de recherche: Applications de la télédétection à l'étude de l'environnement et au développement de modèles mathématiques prognostiques de l'atmosphere, des mers et des climats

Durée/Fréquence/langue(s) d'enseignment: --/Annuelle/français

Répartition du temps alloué en Salle de classe/Laboratoire/Travail sur le terrain/Recherche indépendante: 50%/--/--/50%

Moyens dont dispose l'établissement pour exécuter les programmes: --

Nombre de participants: Entre 3 et 30

Critères régissant l'admission: Formation universitaire en mathématiques appliqués et mécanique des fluides

Certificats ou diplômes obtenus: Certificats du 3ème cycle en géodesie et géophysique

2. COUT DES PROGRAMMES

Frais de scolarité, manuels et autres matériaux de recherche: Frais d'inscription et FB 1.000 pour les mensuels

Frais mensuels de logement et de subsistance et faux frais: FB 1.500

3. POSSIBILITES DE BOURSES D'ETUDES OU DE PERFECTIONNEMENT

Possibilités de bourses d'études ou de perfectionnement pour des participants étrangers: Bourses ERASMUS pour étudiants européens

Existence d'autres possibilités d'octroi d'une aide financière pour participants étrangers: Bourses de recherche de courte durée

4. COLLABORATION AVEC PAYS EN DEVELOPPEMENT: Oui

Domaines qui vous intéressent: Application du modèle mathématique

Préférence géographique: --

C. ETABLISSEMENT

UNIVERSITE DE LIEGE, LABORATOIRE DE GEOMORPHOLOGIE ET DE GEOLOGIE DU GUATERNAIRE

Place du 20 Août, 7, 4000 Liège, Belgique

Telex: UNIV.LG 41397 Téléphone: 041/44.00.80,
ext. 257-446-478

Responsable: A. Pissart et A. Ozer

Vocation(s) principale(s) de votre établissement: Enseignement, recherche, développement

1. PROGRAMMES DE CULTURE GENERALE ET SCIENTIFIQUES

Description des cours et activités:
Enseignement et recherche: interprétation des images-satellite et des photos aériennes dans le domaine géologique et géomorphologique.
Etude en cours: images SPOT et LANDSAT. Projet ERS 1

Durée/Fréquence/Langue(s) d'enseignment: 60 h/annuelle/français

Répartition du temps alloué en Salle de classe/Laboratoire/Travail sur le terrain/Recherche indépendante: 15%/45%/6 jours/variable

Moyens dont dispose établissement pour exécuter les programmes: Laboratoire

Nombre de participants: Entre 5 et 7

Critères régissant l'admission: Licence en géologie ou en géographie

Certificats ou diplômes obtenus: Ces enseignements font partie de la licence spéciale pour la géologie des terrains superficiels (G.T.S.) et de la licence en géographie physique pour les pays de développement (CEDEV)

2. COUT DES PROGRAMMES

Frais de scolarité, manuels et autres matériaux de recherche: --

Frais mensuels de logement et de subsistance et faux frais: --

3. POSSIBILITES DE BOURSES D'ETUDES OU DE PERFECTIONNEMENT

Possibilités de bourses d'études ou de perfectionnement pour des participants étrangers: Oui

Existence d'autres possibilités d'octroi d'une aide financière pour participants étrangers: AGCD accords culturels bilatéraux

4. COLLABORATION AVEC PAYS EN DEVELOPPEMENT: Oui

Domaines qui vous intéressent: Télédétection et géologie/géomorphologie

Préférence géographique: --

D. ETABLISSEMENT

UNIVERSITE DE LIEGE, SEMINAIRE DE GEOGRAPHIE, LABORATOIRE DE PHOTO INTERPRETATION

Place du 20 Août, 32, B-4000 Liège, Belgique

Télex: UNIV ULG 41397 Tél.: (041) 66.55.56

Responsable: J. Wilmet

Vocation(s) principale(s) de votre établissement: Enseignement, recherche et développement

1. PROGRAMMES DE CULTURE GENERALE ET SCIENTIFIQUES

Description des cours et activités:
Cours: 2ème partie du cors de photo-interprétation dans laquelle on envisage les données des satellite LANDSAT, NOAA et SPOT et leur utilisation pour l'aménagement du territoire
Activités de recherche: Analyse d'images multispectrales aériennes et satellitaires

Durée/Fréquence/Langue(s) d'enseignment: 3 heures par semaine/durant 13 semaines/français

Répartition du temps alloué en Salle de classe/Laboratoire/Travail sur le terrain/Recherche indépendante: 10 h /10 h /--/--

Moyens dont dispose l'établissement pour exécuter les programmes: Stéréoscopes, chambres claires, densitomètre, laboratoire photographique

Nombre de participants: Entre 10 et 25 dans le cadre de la licence; de là 5 dans le cadre de la licence interuniversitaire

Critères régissant l'admission: Licence en sciences ou titre d'ingénieur

Certificats ou diplômes obtenus: Intégrés dans la licence en sciences géographiques - Licence interuniversitaire en géographie appliquée (grade scientifique), orientation cartographie et télédétection, diplôme en cartographie et télédétection. Seminaire aux ingenieures civils (5e année: spêcialite electronique)

2. COUT DES PROGRAMMES

Frais de scolarité, manuels et autres matériaux de recherche: --

Frais mensuels de logement et de subsistance et faux frais: --

3. POSSIBILITES DE BOURSES D'ETUDES OU DE PERFECTIONNEMENT

Possibilités de bourses d'études ou de perfectionnement pour des participants étrangers: --

Existence d'autres possibilités d'octroi d'une aide financière pour participants étrangers: --

4. COLLABORATION AVEC PAYS EN DEVELOPPEMENT: Oui

Domaines qui vous intéressent: Affectation du sol, croissance urbaine

Préférence géographique: --

E. ETABLISSEMENT

UNIVERSITE LIBRE DE BRUXELLES

Avenue F.D. Roosevelt, 50, B-1050 Bruxelles, Belgique

Télex: 23069 Téléphone: 33-2-642211
Adresse télégraphique: UNILIB

Responsable: M. Valentin

Vocation(s) principale(s) de votre établissement: Enseignement, recherche, développement

1. PROGRAMMES DE CULTURE GENERALE ET SCIENTIFIQUES

Description des cours et activités:
Cours: Cours de 2ème cycle (licence en géologie)
Activités de recherche: --

Durée/Fréquence/Langue(s) d'enseignment: 15 h/annuelle/français

Répartition du temps alloué en Salle de classe/Laboratoire/Travail sur le terrain/Recherche indépendante: 100%/--/--/--

Moyens dont dispose établissement pour exécuter les programmes: --

Nombre de participants: Variable

Critères régissant l'admission: Diplôme de ler cycle

Certificats ou diplômes obtenus: --

2. COUT DES PROGRAMMES

Frais de scolarité, manuels et autres matériaux de recherche: --

Frais mensuels de logement et de subsistance et faux frais: --

3. POSSIBILITES DE BOURSES D'ETUDES OU DE PERFECTIONNEMENT

Possibilités de bourses d'études ou de perfectionnement pour des participants étrangers: Néant

Existence d'autres possibilités d'octroi d'une aide financière pour participants étrangers: Bourses et stages ASE et Commission des Communautés Européennes

4. COLLABORATION AVEC PAYS EN DEVELOPPEMENT: Oui

Domaines qui vous intéressent: Les domaines sont les mêmes que les descriptions des cours et activités

Préférence géographique: Aucune

F. ETABLISSEMENT

LABORATOIRE DE GEOGRAPHIE REGIONALE

Centre de télédétection, Université de l'Etat de Gand, Krijgslaan 281, B-9000
Gent, Belgique

Téléphone: 091/22.57.15

Responsable: Prof. Dr Luc Daels

Vocation(s) principale(s) de votre établissement: Enseignement, recherche et développement

1. PROGRAMMES DE CULTURE GENERALE ET SCIENTIFIQUES

Description des cours et activités de recherche:
Cours: Cours d'entrainement dans le domaine de la télédétection sur différents niveaux
Activités de recherche: Recherche fondamentale surtout axée sur la méthodologie et l'analyse de l'image. Recherche sur l'interprétation des donnés des satellites de la deuxième génération. Recherche appliquée: plusieurs chercheurs travaillent sur la problème de la désertification (études au Soudan, en Iraq et en Egypte). Les données de la télédétection sont analysées d'une manière visuelle et d'une manière digitale. Plusieurs études concernant l'utilisation des sols sont en cours pour l'Afrique centrale

Durée/Fréquence/Langue(s) d'enseignement: 1 année/46 h par semaine/anglais, néerlandais

Répartition du temps alloué en Salle de classe/Laboratoire/Travail sur le terrain/Recherche indépendante: 30%/40%/20%/10%

Moyens dont dispose l'établissement pour exécuter les programmes: Instruments d'interprétation, équipement pour le renforcement des images, équipement pour le traitement numérique des données satellites

Nombre de participants: Entre 2 et 6

Critères régissant l'admission: Niveau universitaire, géographe, géologue, agronome. Niveau A2 (ingenieur technique)

Certificats ou diplômes obtenus: Diplôme M.Sc. (après 2 ans), diplôme d'études approfondies (après 1 an), certificat (après un stage de 6 mois)

2. COUT DES PROGRAMMES

Frais de scolarité, manuels et autres matériaux de recherche: A règler avec l'administration universitaire

Frais mensuels de logement et de subsistance et faux frais: FB 14.000

3. POSSIBILITES DE BOURSES D'ETUDES OU DE PERFECTIONNEMENT

Possibilités de bourses d'études ou de perfectionnement pour des participants étrangers: Oui. Variable

Existence d'autres possibilités d'octroi d'une aide financière pour participants étrangers: Néant

4. COLLABORATION AVEC PAYS EN DEVELOPPEMENT: Oui

Domaines qui vous intéressent: La télédétection pour l'étude de la désertification (transports des sables, salinisation et formation des croûtes calcaires).
L'utilisation des sols (Afrique et la Méditerranée)

Préférence géographique: Soudan, Iraq, Egypte, Zaïre

G. ETABLISSEMENT

FACULTE DES SCIENCES AGRONOMIQUES DE L'ETAT

B-5800 Gembloux, Belgique

Téléphone: 32 (0) 81622187 Fax: 32 (0) 81-614544

Responsable: Prof. S. Dautrebande

Vocation(s) principale(s) de votre établissement: Enseignement, recherche et développement

1. PROGRAMMES DE CULTURE GENERALE ET SCIENTIFIQUES

Description des cours et activités de recherche: Données de base et orientation agronomique. Exploitation logiciels Telede-tection et GIS dans le domaine agronomie-hydrologie (orientation vers Afrique centrale et Afrique sèche, Belgique, Europe)

Durée/Fréquence/Langue(s) d'enseignment: 2 á 4 ans/français (anglais)

Répartition du temps alloué en Salle de classe/Laboratoire/Travail sur le terrain/Recherche indépendante: --/--/--/--

Moyens dont dispose établissement pour exécuter les programmes: Logiciels ERDAS et ARCINFO, table de digitalisation, scanner

Nombre de participants: Entre 1 et 3

Critères régissant l'admission: Graduat en agronomie ou géographie

Certificats ou diplômes obtenus: Certificat d'etudes approfondies ou doctorat

2. COUT DES PROGRAMMES

Frais de scolarité, manuels et autres matériaux de recherche: Oui

Frais mensuels de logement et de subsistance et faux frais: Oui

3. POSSIBILITES DE BOURSES D'ETUDES OU DE PERFECTIONNEMENT

Possibilités de bourses d'études ou de perfectionnement pour des participants étrangers: Neant

Existence d'autres possibilités d'octroi d'une aide financière pour participants étrangers: Néant

4. COLLABORATION AVEC PAYS EN DEVELOPPEMENT: Oui

Domaines qui vous intéressent: Agronomie et hydrologie

Préférence géographique: Afrique centrale et zones du Sahel

BRAZIL

INSTITUTION

INSTITUTO DE PESQUISAS ESPACIAIS (INPE)

Caixa Postal 515, 12200 Sao Jose dos Campos, SP, Brazil

Telex: (011) 33530 Tel.: (0123) 22.9977

Contact person: Woldir Renato Paradella

Principal function(s) of institution: Research and development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Training and Master's level courses in remote sensing; Master's and Doctoral courses in Informatics (pattern recognition)
Research: Basic Research: spectral behaviour of natural targets, radiation of scenes, automatic pattern recognition of remote sensing imagery. Applied Research: Agronomy, cartography, crop forecasting, environmental analysis, forestry, geology, oceanography. Development: Satellite reception stations software, automatic image processing systems

Duration/Frequency/Language(s) of instruction: M-3 years, D-4 years/Annually/Portuguese

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --/--/--/--

Facilities: Laboratories, field work facilities

Number of trainees: --

Entry requirements: B.Sc. for Master's and M.Sc. for Doctoral courses

Degree/Diploma/Certificate awarded: Diploma for Master's and Doctoral degrees. Certificates for short courses and training

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Graduate courses: no tuition, special arrangements for research materials. Other courses/training: special arrangements

Monthly room and board and incidental expenses: Approx. $US 250

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: OAS and other international organizations (e.g., United Nations Programme on Space Applications)

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Same areas mentioned in summary of courses and research activities

Geographical preference: None

BULGARIA

A. INSTITUTION

BULGARIAN SPACE COORDINATING COMMITTEE

Acad. G.Bonchev St., bl.3, Sofia 1113, Bulgaria

Telex: 359 (2) 22632 Tel.: 359 (2) 700226
Fax: 359 (2) 700229

Contact person: Dimitar Mishev, Acad. G. Bonchev St. bl 3, Sofia 1113

Principal function(s) of institution: Research and development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: Physical background of remote sensing. Sensors: optical, IR, radio and thermal for air and space-borne vehicles. Systems for data acquisition. Systems for preliminary processing. Systems for interpretation of spectrometric and multi-channel data and images. Multispectral data and image dissemination

Duration/Frequency/Language(s) of instruction: 1-3 years/1-3 years/English, Russian

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 20%/30%/20%/30%

Facilities: Combined ground-based, airborne and satellite and orbiting station facilities

Number of trainees: Between 2 and 5

Entry requirements: University education (Master's degree)

Degree/Diploma/Certificate awarded: Professional certificate and/or Ph.D. degree if requested by the candidate

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: $US 900 per month

Monthly room and board and incidental expenses: $US 1,800

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Opportunities available and organized on request and depending on agreement

Other financial support available for foreign participants: Other financial aid possibilities exist for foreign participants

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Same as those specified under summary of courses and research activities

Geographical preference: None

B. INSTITUTION

SPACE RESEARCH INSTITUTE

6 Moskovska str., Sofia 1000, Bulgaria

Telex: 23351 IKI BAN BG Tel.: 88 35 03 Fax: (3592) 801347

Contact person: Dr. A. Stoimenov

Principal function(s) of institution: Research and development, training

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: Satellite imagery processing, geodetic surveying techniques, geodynamics, satellite remote sensing instruments, land-use, ecological monitoring and agricultural applications

Duration/Frequency/Language(s) of instruction: --

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --

Facilities: Image processing facilities, computer facilities, laboratory equipment

Number of trainees: up to 2

Entry requirements: Academic diploma

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Yes

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Mentioned areas on regional level

Geographical preference: --

CHILE

INSTITUTION

UNIVERSIDAD DE CHILE, CENTRO DE ESTUDIOS ESPACIALES

Arturo Prat 1171, Of.119, Santiago, Chile

Telex: 240523 CENET CL Tel.: 56-2-721816
Fax: 56-2-8441003

Contact person: Martin S. Farias

Principal function(s) of institution: Satellite tracking station and satellite data applications

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Basic and advanced remote sensing; basic and advanced geographic information systems
Research: Environment, Oceanography, Fisheries, Forestry, Agriculture

Duration/Frequency/Language(s) of instruction: 2 weeks/3 per year/Spanish

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 60%/30%/--/10%

Facilities: Receiving station, data processing systems, classrooms, laboratories

Number of trainees: between 6 and 15

Entry requirements: University degrees

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: $US 500

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Above areas

Geographical preference: South America

COLOMBIA

INSTITUTION

INSTITUTO GEOGRAFICO "AGUSTIN CODAZZI", SUBDIRECCION DE DOCENCIA E INVESTIGACION

Carrera 30 No. 48-51, Santa Fe de Bogota, Colombia

Telex: 45485 IGACCO Fax: (571) 2680004, (571) 2114751

Contact persons: Luis Carlos Molina Marino

Principal function(s) of institution: Training, education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Short and postgraduate courses on different aspects of photogrammetry, geography, GIS, computer cartography, photointerpretation and remote sensing and its applications (forestry, geology, soil science, regional surveys, civil engineering)
Research: Application of remote sensing in different disciplines

Duration/Frequency/Language(s) of instruction: Short courses 2 months, Postgraduate courses 40 weeks; Master 2 years/Each year/Spanish

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 20%/50%/20%/10%

Facilities: Mirror stereoscopes; Kargl reflecting projectors; Zoom transferscopes; photogrammetric laboratory; 10 complete workstations (digital processing and peripheral equipment); additional minor equipment for laboratory and field work

Number of trainees: Between 10 and 25 for each course. Total - 250 per year.

Entry requirements: Professional degree

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Short courses, variable according to length and theme. Postgraduate courses $US 2,500 a year

Monthly room and board and incidental expenses: $US 300

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Postgraduate courses-40 per year. Short courses-150 per year

Other financial support available for foreign participants: ICETEX (Colombia), OAS, ITC, BID, IPGH

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Remote sensing. Remote sensing applied to natural resources surveys. Software for digital analysis of remote sensing data, GIS and computer cartography

Geographical preference: Latin American and Caribbean region

DENMARK

A. INSTITUTION

TECHNICAL UNIVERSITY OF DENMARK, ELECTROMAGNETICS INSTITUTE

Technical University of Denmark, Denmark

Telex: 37529 DTHDIA DK Tel.: 45-42-881444
Fax: 45-45-931634

Contact person: Prof. P. Gudmandsen

Principal function(s) of institution: Education, research and development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Remote sensing course designed for electronic engineering students with emphasis on the basic physics of remote sensing and principles of instrument design. The major part of the course is concerned with passive and active microwave remote sensing. It includes a number of case studies of actual satellite Earth Observation.
Research: Development of methods of analysis of satellite data applied to polar and sub-polar ocean studies, to forestry and agriculture studies and monitoring, to environmental studies in coastal waters, with emphasis on active and passive microwave techniques.

Duration/Frequency/Language(s) of instruction: 14 weeks/every year/Danish (English for foreign students)

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 80%/20%/--/ additional 3 week period

Facilities: Digital image processing systems with workstations, tape drives, disk drives and other peripheral equipment. Digital film recorder (FIRE 240).

Number of trainees: Depending on funding possibilities

Entry requirements: B.Sc.

Degree/Diploma/Certificate awarded: Statement issues by the institute

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: about 500 DKK; 65 ECU

Monthly room and board and incidental expenses: about 5,000 DKK; 650 ECU

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: Yes

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Above-mentioned areas

Geographical preference: None

B. INSTITUTION

UNIVERSITY OF COPENHAGEN, INSTITUTE OF GEOGRAPHY

Oster Voldgade 10, DK-1350 Copenhagen K, Denmark

Tel.: 45 33 132105 Fax: 45 33 148105

Contact person: K. Rasmussen

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Introduction to (i) the physical basis, the technology and agricultural and environmental applications of optical satellite remote sensing and (ii) satellite image processing methods. The course includes a series of lectures covering the following topics:

- The physical basis of remote sensing in the optical part of the spectrum
- Overview of properties and applications of available satellite/sensor systems
- Spectral reflectance properties of the Earth's surface
- Digital image display and enhancement
- Statistical analysis of spectral and textural properties of surfaces
- Spectral transformations

- Image classification
- Geometrical correction
- Integration of satellite images and geographical information systems.

Practical exercises will give the participants hands-on experience with a range of satellite image types and digital image processing procedures.
Research: Mapping and monitoring of agricultural land-use and environmental conditions; monitoring of natural vegetation and crop development; monitoring of agrometeorological parameters, such as rainfall, temperature and actual evapotranspiration; Urban land use mapping

Duration/Frequency/Language(s) of instruction: 12 weeks/every autumn/English (only for foreign students)

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 33%/33%/--/33%

Facilities: The institute has 10 satellite image processing systems, all PC-based and equipped with locally developed software, CHIPS. Of these 3 are located in the image processing lab with open access for students and trainees. In addition Institute is equipped with a number of relevant peripherals, incl. equipment for GIS-type work. Radiometers a.s.o. for field measurements and a large amount of agromet sensors are available.

Number of trainees: between 4 and 10

Entry requirements: B.Sc.

Degree/Diploma/Certificate awarded: Certificates are awarded after each course

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: $US500/150/150

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: For trainees from developing countries, scholarships are in some cases available through DANIDA.

Other financial support available for foreign participants: Yes. According to official exchange programmes.

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: as indicated above

Geographical preference: Africa

ECUADOR

INSTITUTION

CLIRSEN/COTOPAXI GROUND STATION

Seniérges s/n Gral. Paz y Miño, Edif. IGM, 4to. piso, Quito, Ecuador

Telex: 2775 CLIRSN ED Tel.: 549-472; 581-063
Fax: 593-2-581-066

Contact person: Fernan Sandoval

Principal function(s) of institution: Receiving, recording and processing satellite data and forming the national natural resources inventory

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: Digital processing; spectral measurements; remote sensing applications

Duration/Frequency/Language(s) of instruction: --

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --

Facilities: Catopaxi ground station capable of receiving Landsat, Spot, ERS-1 and GOES information. Specific hardware and software, including ERDAS, Earthview, Microid, Meridian, Sigren, SARPS, GIS, GICS

Number of trainees: between 10 and 25

Entry requirements: Specialist in Natural Resource Management

Degree/Diploma/Certificate awarded: Only participation diplomas/certificates

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: National courses are free and international courses are about $US 150.

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: Yes

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Remote sensing

Geographical preference: Central and South American countries

E G Y P T

INSTITUTION

REMOTE SENSING CENTER

Academy of Scientific Research and Technology, 101 Kasr El-Eini, Cairo, Egypt

Telex: 93069 ASRT UN   Tel.: 3540173

Contact person: Prof. M. Abdel Hady; Prof. Hussein A. Younes; Dr. Maged El-Rakaiby

Principal function(s) of institution: Research and development, Image Production, Training

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Principles of remote sensing; Applications of remote sensing to geology, geomorphology, mineral resources, ground water, soil, natural vegetation, cultivation, landuse, etc.; Image processing (different techniques); Image production.
Research: A new ratio technique for rock type discrimination with topographic enhancement; Qualitative and quantitative analysis of the data to choose the best band rationing which may be used in rock discrimination in Egyptian lands; Comparison between different enhancement techniques for soil classification purposes.

Duration/Frequency/Language(s) of instruction:
1-2 months/Year/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 40%/--/10%/20%

Facilities: Publications, literature notes, images, facilities for field trips, teaching staff

Number of trainees: between 10 and 20

Entry requirements: B.Sc. in geology, engineering, agriculture

Degree/Diploma/Certificate awarded: Certificate of attendance

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: According to the duration and the content of the programme: 1000-3000.

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Software development and applications, joint research projects

Geographical preference: --

FINLAND

A. INSTITUTION

HELSINKI UNIVERSITY OF TECHNOLOGY, LABORATORY OF SPACE TECHNOLOGY

Otakaari 5A, SF-02150 Espoo, Finland

Telex: 123889 Tel.: 358-0-4512371
Telefax: 358-0-460224 Cable: --

Contact person: Dr. Martti Hallikainen

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Remote sensing, environmental electronics
Research: Development of radiometers and radars. Remote sensing of soil, forest, snow, ice. Mapping of atmosphere ozone. Interpretation of satellite data.

Duration/Frequency/Language(s) of instruction: 1 Semester/Annually/Finnish (English, if necessary)

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 50%/25%/25%/Optional

Facilities: Airborne radiometers and radars; Image processing systems; ground truth instruments

Number of trainees: Up to 10

Entry requirements: B.Sc. degree

Degree/Diploma/Certificate awarded: M.Sc. and Ph.D. Programmes in Space Technology

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Nominal text, etc. fee

Monthly room and board and incidental expenses: FIM 2,500 (in dormitory)

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Instrumentation and applications of microwave remote sensing

Geographical preference: None

B. INSTITUTION

HELSINKI UNIVERSITY OF TECHNOLOGY, INSTITUTE OF PHOTOGRAMMETRY AND REMOTE SENSING

Otakaari 1, 02150 Espoo, Finland

Telex: 125161 HTKK SF Tel.: 358-0-4513900

Contact person: Prof. Einari Kilpelä

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Fundamentals of photogrammetry and photointerpretation. Digital image processing and photogrammetry. Photogrammetry, photointerpretation and remote sensing. Photogrammetric equipment and its calibration. Photography in photogrammetry, process techniques in photogrammetric mapping. Special assignment in photogrammetry or in photointerpretation and remote sensing. Post-graduate seminar on photogrammetry and remote sensing.
Research: Digital image processing in photogrammetry. Real-time and feature-based photogrammetry

Duration/Frequency/Language(s) of instruction: 1-2 semesters/Annually/Finnish

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 30%/40%/5%/25%

Facilities: Analytical plotter Kern DSR 1 and ADAM ASP 2000. Digital Image Processing System from Data General. Mapvision II system for real-time photogrammetry. Various mapping and other photogrammetric instruments

Number of trainees: --

Entry requirements: B.Sc., M.Sc. degree preferable

Degree/Diploma/Certificate awarded: Licensiate of Technology; M.Sc. in Technology; Doctor of Technology

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Tuition fees, textbooks

Monthly room and board and incidental expenses: Fmk 2,000

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific area of interest: Digital image processing

Geographical preference: None

C. INSTITUTION

TECHNICAL RESEARCH CENTRE OF FINLAND (VTT)

Box 100, SF-02151 Espoo, Finland

Telex: 122972 VTTHA SF Tel.: 358-0-4561
Fax: 358-0-456 7020

Contact person: T. Häme

Principal function(s) of institution: Technical research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Data processing; image processing; interpretation; forest applications; water resource applications.
Research: SAR and video techniques; imaging spectrometry; forest applications

Duration/Frequency/Language(s) of instruction: --

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --

Facilities: Computers

Number of trainees: up to 2

Entry requirements: Undergraduate students

Degree/Diploma/Certificate awarded: None

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: Salary can be paid for the exchange researchers.

4. COLLABORATION WITH DEVELOPING COUNTRIES: No

Specific areas of interest: --

Geographical preference: --

FRANCE

INSTITUTION

GROUPEMENT POUR LE DEVELOPPEMENT DE LA TELEDETECTION AEROSPATIALE (GDTA)

18, Avenue Edouard Belin 31055, Toulouse, CEDEX, France

Telex: 531081F Tel.: 61274290

Contact person: B. Delor; GDTA, FORMATION

Principal function(s) of institution: Training and development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses:

CETEL:	Review
	Basics and methods
	Applications
	Practical training session
SITEL:	Physical and technological bases
	Data processing
	Interpretation
	Applications
SPOT:	Technical characteristics of the system
	Interfaces users-system
	Space segment
	Ground segment
	Data processing
	Applications
SPACE OCEANOGRAPHY:	Physical bases
	Instrumentation and data processing
	Applications

Research: Development of satellite instrumentation. Thematic campaigns of remote sensing

Duration/Frequency/Language(s) of instruction:
CETEL: 10 months/annually/French
SITEL: 4 weeks/4 times a year/French
SPOT : 2 weeks/4 times a year/French and English
SPACE OCEANOGRAPHY: 3 weeks/annually/French

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: CETEL: 50%/15%/10%/25%; SITEL: 80%/20%/--/--; SPOT: 80%/20%/--/--; SPACE OCEANOGRAPHY: 70%/30%/--/--

Facilities: Facilities of the members of the Groupement, French Space Agency, National Geographic Institute, IFREMER, SPOT system

Number of trainees: Between 10 and 20

Entry requirements: CETEL - M.Sc. or equivalent. Others: no requirement

Degree/Diploma/Certificate awarded: CETEL: possibly French University DESS

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: CETEL: FF 85,000; SITEL: FF 13,000; SPOT: FF 14,000; Oceanography: FF 18,000

Monthly room and board and incidental expenses: FF 4,000 per month

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: French Government and international organizations

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: All the application fields of remote sensing training centres

Geographical preference: None

GERMANY

A. INSTITUTION

DEUTSCHE FORSCHUNGSANSTALT FUR LUFT- UND RAUMFAHRT e.V. (DLR) (GERMAN AEROSPACE RESEARCH ESTABLISHMENT)

P.0. Box 90 60 50, 5000 Köln 90, Federal Republic of Germany
Telex: 8810-0 DLRD Tel.: 49 (0) 2203-6010
Fax: (0) 2203-67310

Contact person: Prof. Dr. Walter Kröll, Chairman

Principal function(s) of institution: Research, development and scientific services

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: --
Research: Sensor technology in optical and microwave remote sensing and data processing

Duration/Frequency/Language(s) of instruction: --/--/--

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: Not separately identified

Facilities: Laboratories, digital and analog image processing facilities

Number of trainees: Depends on number and scope of joint projects

Entry requirements: M.Sc. or Ph.D.

Degree/Diploma/Certificate awarded: None

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: N/A

Monthly room and board and incidental expenses: N/A

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: On a case-by-case basis financial assistance for living expenses may be available

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Any area where a foreign partner will make a substantial (not necessarily financial) contribution to a joint project of common interest

Geographical preference: --

B. INSTITUTION

GERMAN FOUNDATION FOR INTERNATIONAL DEVELOPMENT, FOOD AND AGRICULTURE DEVELOPMENT CENTER

Wielingerstr. 52, P.O. Box 20, D-8133 Feldafing, Germany

Telex: 815784 Tel.: 0049-8157-38120
Cable: DEUTSCHSTIFTUNG FELDAFING

Contact person: Olaf Anders, DSE-Forestry Section

Principal function(s) of institution: Training (individual + courses) and Dialogue (seminars + conferences)

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: Application of Remote Sensing and Geographic Information Systems in Tropical Forest Management

Duration/Frequency/Language(s) of instruction: 4 weeks/1 year/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 50%/40%/10%/--

Facilities: Training facilities. Electronic equipment.

Number of trainees: between 20 and 25

Entry requirements: B.Sc. and 3 years of practical experience

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Information upon request

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Yes, 25 a year.

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Above-mentioned areas

Geographical preference: ASEAN region/Southeast Asia

GREECE

A. INSTITUTION

INSTITUTE OF GEOLOGY AND MINERAL EXPLORATION

70 Messoghion St., 11527 Athens, Greece

Telex: 216357 IGME GR Tel.: 7798412

Contact persons: J. Karfakis, Dr. P. Tsombos, Dr. M. Stefouli

Principal function(s) of institution: Research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Research activities in Remote Sensing: Remote sensing applications to geology, image interpretation, geographic information system; these activities could not be offered as a training course, but only through specific collaborative projects

Duration/Frequency/Language(s) of instruction: --

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research:--/--/--/--

Facilities: Remote sensing interpretation equipment, computer, collection of air photographs and LANDSAT images

Number of trainees: --

Entry requirements: --

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: --

Geographical preference: None

B. INSTITUTION

UNIVERSITY OF ATHENS, REMOTE SENSING LABORATORY

P.O. Box 64022, Athens 157.01, Greece

Telex: 223815 UNIV GR Tel.: (30-1) 7284299
Fax: (30-1) 3602145

Contact person: Prof. M. Moutsoulas

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: Digital analysis of remote sensing imagery; remote sensing applications in geodesy, oceanography, climatology, geomorphology, and structural geology.

Duration/Frequency/Language(s) of instruction: 1 semester/Annually/Greek

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 30%/50%/10%/10%

Facilities: Data processing systems available: WYSE 386/25 with 4MB memory, WY-7190 and Number Nine Revolution graphics cards, HD 150 MB, tape streamer; 5 XT compatibles with 20 MB HD; Laser Printer Fujitsu RX 7100PS (HP emulation and postscripts); Color InkJet Printer Xerox 4020; Plotter A0, 8 pens, Encad SP8430; Digitizer Summagraphics Microgrid II; CYBER 170/730 CDC (Dual CPU), NOS 2 operating system, memory 2.5 MB, disk capacity 3.5 GB, magn. drives: 4 x 9 tracks 1600/6250 bpi, 1 x 9 track 800/1600 bpi, 1 x 7 track 556/800 bpi; Plotter drum plot Calcomp 4051; Printers 2 x CDC580, 1200 lpm.

Number of trainees: between 5 and 30

Entry requirements: Must be senior student of University

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Free for the registered University students

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Yes, 6 available

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: --

Geographical preference: --

INDIA

A. INSTITUTION

INDIAN SPACE RESEARCH ORGANISATION (ISRO), DEPARTMENT OF SPACE

Antariksh Bhavan, New BEL Road, Bangalore-560 094, India

Telex: 0845-2499 Tel.: 0812-334474
Cable: ISRO, Bangalore Fax: 0812-334229

Contact person: Mr. M. G. Chandrasekhar

Principal function(s) of institution: R & D in Space Sciences, Technology and Applications. Execution of National Space Programmes at its establishments.

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Fundamental aspects of remote sensing, data acquisition and processing, analysis, interpretation and information extraction for resources management. Digital image processing including multispectral interactive data analysis system.
Research: Use of Geographic Information System and digital terrain modelling techniques to develop a sustainable management of natural resources. Development of interpretation/analysis aids both digital and visual.

Duration/Frequency/Language(s) of instruction: 18 months ME, M Tech/Every year/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --

Facilities: --

Number of trainees: Up to 10

Entry requirements: Bachelors Degree in Eng/Masters Degree in Science

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: No course fee is charged for participants covered by Sharing of Experience in Space (SHARES) programme.

Monthly room and board and incidental expenses: Nominal rate charged for accommodation

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: Yes. Financial support ranges from Rs.3000/- to Rs.4500/- per month for participant depending on their background and experience.

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Remote sensing

Geographical preference: --

B. INSTITUTION

INDIAN INSTITUTE OF REMOTE SENSING (IIRS)

P.O. Box No. 135, 4, Kalidas Road, Dehradunn, 248001, India

Telex: 0595-224 NRSAIN Tel.: 24583 Cable: REMOTIPI

Contact person: Head, IIRS

Principal function(s) of institution: Training and research in remote sensing applications

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: Focal point for all formal remote sensing training courses in India

Duration/Frequency/Language(s) of instruction: Range from one week to ten months/One per year for all courses/English

Allocation of time spent in Classroom/Tutorials/Laboratory/ Field Work/Independent Research: Core course I module (3 months): 120/60/180/-- hours; PG Diploma II module: 160/80/220/-- hours; 10 months III module: --/--/--/ 3 months; Short course on remote sensing (8 weeks): 76/32/129/35 hours; Orientation course (2 weeks): 20/--/52/14 hours; Decision-makers course (1 week): 15 plus 15 hours (demonstrations and visits)

Facilities: Photo processing laboratory; photogrammetry and cartographic laboratory; image interpretation laboratory; remote sensing ground truth laboratory; digital data analysis laboratory; soil laboratory; geosciences, forestry and ecology, marine science, water resources facilities; library

Number of trainees: Varies

Entry requirements: Varies for different courses

Degree/Diploma/Certificate awarded: PG diploma for 10 months course; certificate for others

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: For Indian participants: varies for different courses; for foreign participants: US$ 500 per month; US$ 125 per week

Monthly room and board and incidental expenses: US$ 250

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: To a limited extent can be provided through the Government of India, Department of Space SHARE programme

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Training in remote sensing applications

Geographical preference: None, but knowledge of English language is necessary

C. INSTITUTION

NATIONAL REMOTE SENSING AGENCY (NRSA)

Balanagar, Hyderabad-500037, India

Telex: 0425-6522 Tel.: 262572 to 77 Cable: REMOSEN

Contact person: Director

Principal function(s) of institution: Remote sensing data acquisition and processing, data dissemination, analysis/interpretation of data for various earth resources applications, training

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: Courses and research activities in remote sensing technology and applications including: Urban and Regional Planning, Aerial and Satellite Photo Processing, color photography course; Special courses and research can be provided on a case-by- case basis.

Duration/Frequency/Language(s) of instruction: Course ranging from 1 to 40 weeks/--/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: Varies depending on specific composition of proposed course.

Facilities: Data processing systems for large volume data handling, photo processing laboratory, image interpretation laboratory, digital data analysis laboratory, etc.

Number of trainees: Between 4 and 20

Entry requirement: A degree in basic science/engineering with experience or involvement in resources survey

Degree/Diploma/Certificate awarded: Diploma/certificate

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Approx. US$ 500 per month

Monthly room and board and incidental expenses: US$ 250

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Yes

Other financial support available for foreign participants: Living expenses, tuition fees; some incidental expenses can be provided

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Remote sensing data applications to various earth resources, digital image processing, GIS Expert systems, etc.

Geographical preference: None, however, knowledge of English is necessary for meaningful collaboration

D. INSTITUTION

SPACE APPLICATIONS CENTRE

SAC P.O. Ahmedabad 380 053, India

Telex: 012-239/012-261 Tel.: 446099/447043 Cable: SPACE

Contact person: Director, Space Applications Centre (SAC), Jodhpur Tekra, Ahmedabad-380053, India

Principal function(s) of institution: Training, education, research and development, specific projects with users

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Regular training courses for Indian users on remote sensing every three months. Courses cover all major applications areas followed by on the job training in agriculture, crop forecasting, forestry, water resources, coastal processes, water quality, crop stress detection and crop yield modelling; these also cover geomorphology, thematic mapping, digital image processing, geology, ground water, etc.
Research: Land resources, marine resources, oceanography, use of microwave sensor data, geographic information systems, digital cartography

Duration/Frequency/Language(s) of instruction: 12 weeks/4 courses per year/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 20%/25%/10%/45%

Facilities: Fully equipped photointerpretation laboratories, facilities for ground truth and spectral signature collection, airborne sensors, image processing facility

Number of trainees: Between 1 and 3

Entry requirement: Graduate or post-graduate degree in the subject of research, physics, mathematics or remote sensing

Degree/Diploma/Certificate awarded: Certificate of participation

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Approx. US$ 500 per month

Monthly room and board and incidental expenses: US$ 250

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Between 8 and 10

Other financial support available for foreign participants: Living expenses, tuition fees and some incidental expenses can be provided

4. COLLABORATION WITH DEVELOPING COUNTRIES:

Specific areas of interest: In any of the areas listed above

Geographical preference: Most of the research work pertains to the Indian subcontinent and the Indian Ocean, Bay of Bengal and Arabian Sea regions

I R A Q

INSTITUTION

REMOTE SENSING DEPARTMENT, SPACE AND ASTRONOMY RESEARCH CENTRE

P.0. Box 2441, Jadiriyah, Baghdad, Iraq

Telex: 213976 Tel.: 7765116 Ext. 1100 Cable: BATHILMI

Contact person: Dr. Quassim A. Abdullah

Principal function(s) of institution: Research and development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: --
Research: Basic and applied research in the field of remote sensing

Duration/Frequency/Language(s) of instruction: --/--/--

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 5%/25%/20%/50%

Facilities: Ground receiving station, digital image analysis laboratory, photo laboratory

Number of trainees: Between 4 and 10

Entry requirements: B.Sc.

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: To be negotiated

Monthly room and board and incidental expenses: $US 750

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Two per year

Other financial support available for foreign participants: Through individual agreements between the two parties

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Digital image analysis, photo interpretation, photo processing, software development, hardware design and maintenance for the use of remote sensing, photogrammetry

Geographical preference: Ground-based stations having the same geographical co-ordinates as Iraq if possible

JAPAN

INSTITUTION

UNIVERSITY OF TOKYO, INSTITUTE OF INDUSTRIAL SCIENCE -

7-22, Roppongi, Minatoku, Tokyo, Japan

Telex: 02427317 Kosmur J   Tel.: 03-402-6231 Ext. 2560

Contact person: Prof. S. Murai, Institute of Industrial Science, University of Tokyo, 7-22, Roppongi, Minatoku, Tokyo, Japan

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: Development of computer programmes for pre-processing and classification. Land-use classification in the application to urban environment

Duration/Frequency/Language(s) of instruction: 6 months a year/Once every week/English, Japanese

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 5-15%/5-10%/5-10%/70-80%

Facilities: Digital image processing system

Number of trainees: Between 1 and 5

Entry requirements: Graduate course, computer programming; under 35 years old

Degree/Diploma/Certificate awarded: Master or Doctor of Engineering only through scholarship given by Ministry of Education

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Y 400,000 per year

Monthly room and board and incidental expenses: Y 150,000

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: 2 to 5 scholarships/fellowships are available

Other financial support available for foreign participants: (a) Japan International Co-operation Agency (JICA); (b) Japan Society for Promotion of Science (JSPS)

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Digital image processing technology; applications to agriculture, land use and geology

Geographical preference: South-East Asia

JORDAN

INSTITUTION

ROYAL JORDANIAN GEOGRAPHIC CENTER

P.O. Box 20214, Amman, Jordan

Telex: 22472 JO Tel.: 845188 Fax: 847694

Contact person: Mr. Faisal Al Zuraigat

Principal function(s) of institution: Training, education, production

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Principles and physical bases of remote sensing; Digital Image processing; manual interpretation; aerial photography; sensors applications
Research: Hydrology "drainage systems", soil moisture, geology maps, map revision, classification, desert area development

Duration/Frequency/Language(s) of instruction: 4 months/each year/was in English, now Arabic

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 50%/30%/10%/10% (other programmes for research takes more than 4 months for each item)

Facilities: Digital image processing systems, Micro Vax II, photo-lab, printers, film recorder, electro-static plotter

Number of trainees: between 5 and 30

Entry requirements: B.Sc.

Degree/Diploma/Certificate awarded: Professional Diploma

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: $US 2,000 (2 years where RS is a part of the programme)

Monthly room and board and incidental expenses: $US200

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Remote sensing, cartography, geodesy, photogrammetry

Geographical preference: Arab countries

KUWAIT

INSTITUTION

KUWAIT INSTITUTE FOR SCIENTIFIC RESEARCH

P.O. Box 24885, Safat, Kuwait

Telex: 22299 KISR KT Tel.: 481-6988 Cable: SCIENCE

Contact person: --

Principal function(s) of institution: Research and development, training

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: --

Duration/Frequency/Language(s) of instruction: --

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --

Facilities: --

Number of trainees: --

Entry requirements: --

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: --

Geographical preference: --

LIBYA

INSTITUTION

LIBYAN CENTER FOR SCIENCE OF REMOTE SENSING AND SPACE

P.O. Box 397, Tripoli, Libya

Telex: 20685 Tel.: 607004-14 Cable: Same P.O.Box

Contact person: --

Principal function(s) of institution: Research, services, training, education and development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: --

Duration/Frequency/Language(s) of instruction: --

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --

Facilities: --

Number of trainees: --

Entry requirements: --

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Remote sensing, aerospace engineering, astronomy

Geographical preference: --

MALAYSIA

A. INSTITUTION

MALAYSIAN AGRICULTURAL RESEARCH AND DEVELOPMENT INSTITUTE (MARDI)

P.0. Box 12301, 50774 Kuala Lumpur, Malaysia

Telex: MA 37115 Tel.: (03) 9486601
Fax: (03) 9483664 Cable: MARDI

Contact person: Director General

Principal function(s) of institution: Research and development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: Research on the use of remote sensing for agricultural and related land resources studies. Assist in the development of remote sensing in the country by organizing seminars, workshops and training

Duration/Frequency/Language(s) of instruction: Continuous research programme/--/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --/30%/30%/40%

Facilities: Analog analysis facilities

Number of trainees: --

Entry requirements: Minimum basic degree

Degree/Diploma/Certificate awarded: None

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: N/A

Monthly room and board and incidental expenses: N/A

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Land use mapping and agricultural resources evaluation using satellite data

Geographical preference: Humid tropics; Malaysian Peninsula

B. INSTITUTION

MALAYSIAN CENTRE FOR REMOTE SENSING (MACRES)

No. 13, Jalan Tun Ismail, 50480 Kuala Lumpur, Malaysia

Telex: 36830 Tel.: 603-2987280 Fax: 603-2987036

Contact person: Mr. Nik Nasruddin Mahmood

Principal function(s) of institution: Applied research, training, data acquisition, Geographic Information System (GIS)

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: Applied research in remote sensing and GIS technologies (2B1); Basic courses in using remote sensing and GIS technologies for varied application such as landuse/cover mapping, environment and geology (2B2)

Duration/Frequency/Language(s) of instruction:
2B1: 1-2 years/--/English and Malaysian
2B2: 2-3 years/3 courses per year/English and Malaysian

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research:
2B1: 20%/40%/40%/--
2B2: 40%/40%/20%/--

Facilities: Image processing system, geographical information system, photo-laboratory and cartographic equipment

Number of trainees: between 10 and 20

Entry requirements: Basic degrees in relevant fields

Degree/Diploma/Certificate awarded: Academic (certificates)

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Approx. $US700/course

Monthly room and board and incidental expenses: Approx. $US400/month

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Application of remote sensing techniques in agriculture, geology, environment, forestry

Geographical preference: None

MAURITIUS

INSTITUTION

UNIVERSITY OF MAURITIUS, SCHOOL OF SCIENCE

Mauritius

Telex: 4621 UNIM IW Tel.: (230) 454-1041 Fax: 454-9642

Contact person: Prof. I. Fagoonee

Principal function(s) of institution: Training, education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: Incorporated in degree course in Environmental Studies, including training in image processing

Duration/Frequency/Language(s) of instruction: --

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --

Facilities: Hardware and software

Number of trainees: --

Entry requirements: Undergraduate environmental studies courses

Degree/Diploma/Certificate awarded: B.Sc. (Hons) in Science

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Image processing and GIS

Geographical preference: India (ISRO)

MEXICO

INSTITUTION

UNIVERSIDAD NACIONAL AUTONOMA DE MEXICO, INSTITUTO DE GEOFISICA

Ciudad Universitaria, Coyoacan, Mexico. D.F. 04510, Mexico

Telex: 5-50-24-86 Tel.: (5) 5-48-10-79

Contact person: Dr. Silvia Bravo, Dr. Jorge Lira Chavez

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: Image processing, remote sensing applications to natural resources, remote sensing applied to Seismology and Volcanology

Duration/Frequency/Language(s) of instruction: Semestral/each two semesters/Spanish

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: MSc. 70%/--/--/ 30% (Ph.D. 100%)

Facilities: Software, computer equipment, personnel

Number of trainees: up to 3

Entry requirements: B.Sc. degree and admission test

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Yes. Variable.

Other financial support available for foreign participants: Yes

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: –

Geographical preference: None

NETHERLANDS

INSTITUTION

INTERNATIONAL INSTITUTE FOR AEROSPACE SURVEY AND EARTH SCIENCES (ITC)

350 Boulevard 1945, Enschede, The Netherlands

Telex: 44525
Tel.: 53-874444
Fax: 53-874400
Cable: AERSUR

Contact person: R. C. Vörgers-Benschop, Student Registration

Principal function(s) of institution: Training, education, research and advisory (consulting)

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: On the acquisition, handling and use of geodata, using aerospace surveys and geoinformation systems: Technology level - cartography; Post-Graduate and M.Sc. level - production photogrammetry; integrated map and geo-information production; cartography; digital image processing and remotely sensed data; water resources surveys; geological and applied geomorphological surveys; engineering geology; mineral exploration and exploration geophysics; soil, forest, urban, rural and land ecology surveys; forestry for rural development; survey integration for resources development;geoinformation systems for cadastral or urban applications and for natural resource management.
Research: Ph.D. studies on most of above-mentioned subjects.

Duration/Frequency/Language(s) of instruction: from 2, 4, 6, 10, 11 months minimum to 24 months maximum (Ph.D. studies on top of M.Sc. - 36 months)/English only.

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: Technology and post-graduate courses - 5 days a week without holidays. Theoretical teaching in the mornings and practical exercises in the afternoon/Fieldwork of some 4 weeks in courses of 6 months or longer/Independent research in M.Sc. and Ph.D. level programmes.

Facilities: Exercise rooms with individual stereoscopes for almost every course; photographic laboratory; cartographic designers and printing shop; photogrammetric plotting laboratory containing all world known instruments; digital tapes and image processing laboratory; computer assisted cartography laboratory; computer department supporting geoinformation systems activities, including development of software required for teaching.

Number of trainees: approximately 450 per year

Entry requirements: Stereoscopic vision for the majority of courses; knowledge of English on TOEFL level 500 minimum; B.Sc. degree in any related field as described above (except for cartographic technology where university entrance level with good knowledge of mathematics and physics is sufficient) for post-graduate courses; for M.Sc. courses good results in ITC post-graduate course; for Ph.D. studies good results in ITC M.Sc. level programmes. Two years experience in a field related to mapping.

Degree/Diploma/Certificate awarded: Certificate for courses shorter than 6 months; post-graduate diploma for courses of 6 to 11 months; M.Sc. degree for ensuing M.Sc. studies; Ph.D. degree awarded by a Netherlands university associated to ITC for ITC Ph.D. programme.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Registration fee Dfl.160; tuition for post-graduate (& technology) courses Dfl.3000 to 6000 depending on their duration, except for FRD.3 course Dfl.16,800; tuition for M.Sc. courses between Dfl.10,000 and 11,500; Ph.D. programme Dfl.25,000 or 30,000 per year; lecture notes, books and other study materials some Dfl.1000 per course.

Monthly room and board and incidental expenses: Dfl.1440 using hotel facilities associated to ITC; Dfl.75 per month health insurance; Dfl.1700 miscellaneous and extras for fieldwork per course of maximum a year.

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Several scholarships/fellowships are available in the fellowship programme of the Dutch Government, the European Community and UN agencies. For details, the brochure "General Information" should be requested from ITC.

Other financial support available for foreign participants: Consult above-mentioned brochure.

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: In all areas of specialization, particularly mapping.

Geographical preference: None

NEW ZEALAND

A. INSTITUTION

DEPARTMENT OF SCIENTIFIC AND INDUSTRIAL RESEARCH (DSIR), DIVISION OF INFORMATION TECHNOLOGY

Lower Hutt, New Zealand

Telex: NZ 3814 Tel.: 6445666919

Contact person: Dr. M.J. McDonnell

Principal function(s) of institution: Research and development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: --
Research: Digital image processing; radiometry, automated map production, atmospheric correction of images, Antarctica. Image processing hardware, software and system design. Resource mapping

Duration/Frequency/Language(s) of instruction: --/--/--

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --/--/5%/95%

Facilities: Comprehensive image processing laboratory

Number of trainees: Between 1 and 2

Entry requirements: M.Sc. or Ph.D.; Computing experience

Degree/Diploma/Certificate awarded: None

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: 5 NRAC fellowships are available

Other financial support available for foreign participants: Yes. Booklet available from University on grants

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Willing to accept a limited number of research visitors to use our system to work on our data or their own

Geographical preference: None, but must be English speaking

B. INSTITUTION

DSIR, PHYSICAL SCIENCES

Box 31, 311 Lower Hill, New Zealand

Tel.: 064 4 5666919 Fax: 064 4 5690067

Contact person: S. E. Belliss

Principal function(s) of institution: Research and development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: Image processing software; image processing techniques; sea surface temperature studies; ship detection; motion tracking (non-rigid features); digital elevation model development; atmospheric calibration; orthophotograph generation; radar studies

Duration/Frequency/Language(s) of instruction:
3-18 mos/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --

Facilities: Image processing laboration to obtain satellite data in digital formats and undertake all processing and printing (including high quality transparencies from Optronics) in house. PCs., work stations and a microVax, which is linked to the DSIR National Computer Network

Number of trainees: one

Entry requirements: Applicant should be a working scientist or working technician

Degree/Diploma/Certificate awarded: None

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: $NZ:110-140 per week for private board

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: Yes, through MERT

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes, through MERT

Specific areas of interest: --

Geographical preference: --

C. INSTITUTION

DSIR, LAND RESOURCES

Private Bag, Palmerston North, New Zealand

Tel.: 64 6 356-7154 Fax: 64 6 355-9230

Contact person: Peter Stephens

Principal function(s) of institution: Research and development, training

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Introduction to remote sensing and image processing for third world countries
Research: Improving classification accuracy of remotely sensed data

Duration/Frequency/Language(s) of instruction:
2 months/as required/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 45%/35%/5%/15%

Facilities: MicroVax computers; Sun workstations; IBM personal computers; Digitising, plotting and photographic facilities

Number of trainees: between 8 and 16

Entry requirements: Physical science degree

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: $NZ 15,000 per person

Monthly room and board and incidental expenses: $NZ 3,000

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Soil conservation, watershed management, land use sustainability

Geographical preference: South Pacific, Southeast Asia

NIGERIA

INSTITUTION

UNIVERSITY OF LAGOS, DEPARTMENT OF GEOGRAPHY

Akoka, Lagos, Nigeria

Telex: 21210 UNILAG NG Tel.: 821945
Cable: UNIVERSITY LAGOS

Contact person: Prof. P.0. Adeniyi

Principal function(s) of institution: Training, education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Courses on remote sensing from space, applied remote sensing, concepts and foundation of remote sensing
Research: Development of a national land use classification scheme, analogue and digital assessment of various remotely sensed data for agricultural land use inventory and mapping

Duration/Frequency/Language(s) of instruction: One year for M.A., 2 years for M.Phil., 3 years for Ph.D./Annually/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 50%/10%/10%/30%

Facilities: Mirror and pocket stereoscopes; a micro-computer will be added shortly

Number of trainees: Between 1 and 5

Entry requirements: lst degree in Geography

Degree/Diploma/Certificate awarded: M.A., M.Phil., Ph.D.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Can be obtained by contacting the University authorities

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Areas indicated in summary above

Geographical preference: --

NORWAY

INSTITUTION

NORWEGIAN SPACE CENTRE

P.O. Box 85 Smestad, 0309, Oslo 3, Norway

Telex: 0056-78174 Space n Tel.: 47-2-523800
Fax: 47-2-522397

Contact person: Mr. Per Erik Skrovseth, Head, Earth Observation

Principal function(s) of institution: The Norwegian Space Centre is responsible for coordinating space activities in Norway.

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: Land based remote sensing from part of courses at the universities in Tromso, Trondheim, Oslo and Aas (agricultural university); Space oceanography from part of courses at the University of Oslo and a special course is given in Bergen; Special courses in microwave remote sensing are given at NTH (Trondheim) and UNIK (Kjeller) and in image processing at the University of Tromso.

Duration/Frequency/Language(s) of instruction: Semester/each year/Norwegian

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 60%/20%/20%/--

Facilities: Ship borne in situ measurements form normally part of research activity

Number of trainees: Depends on level of course. Contact persons can be contacted.

Entry requirements: --

Degree/Diploma/Certificate awarded: Only normal diplomas

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Normal university fees (low).

Monthly room and board and incidental expenses: NOK 4,000-5,000

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: The only fellowships/scholarships opportunities available are on post-graduate or visiting scientist basis. Number of opportunities is limited.

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Remote sensing

Geographical preference: None

PAKISTAN

INSTITUTION

PAKISTAN SPACE AND UPPER ATMOSPHERE RESEARCH COMMISSION (SUPARCO)

Sector 28, Gulzar-e-Hijri, Off University Road, P.O. Box 8402, Karachi-75270,
Pakistan

Telex: 25720 SPACE PK
Tel.: 471001; 477151
Fax: 9221-466902
Cable: SUPARCO

Contact person: Dr. Saiful Huk, Director, Remote Sensing Applications Division, SUPARCO

Principal function(s) of institution: Research and development in space science and technology

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: As national co-ordinator for remote sensing in Pakistan, SUPARCO organizes short training courses on annual/biannual basis to acquaint the national users with application of satellite remote sensing data for resource and environmental surveying. These courses are regularly held at Remote Sensing Applications Centre (RESACENT), Karachi or at its regional centers at other cities in the country.
Research: The RESACENT has been actively pursuing a multidisciplinary remote sensing application programme since 1973. The research studies based mainly on Landsat/SPOT data supplemented by aerial and conventional data have been carried out at the Centre. A large volume of Landsat MSS/TM and SPOT HS/PAN data covering the whole of Pakistan and a limited amount of SIR-A, Metric Camera and CZCS data are available at this Centre. These data are being used by scientists/engineers of the Centre as well as by the national user agencies for various application studies.

Duration/Frequency/Language(s) of instruction: One week/annual or biannual/ English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 60%/30%/10%/--

Facilities: The RESACENT has well-equipped laboratory facilities for visual as well as digital interpretation and analysis of remotely sensed data. Electro-optical equipment used for visual interpretation include density slicer, zoom transferscope, zoom stereoscopes, Diazo developer/printer, rationing radiometer and other equipment. The Centre's digital processing facilities include a dedicated, interactive, micro-processor based image processing system - EBBA II - and MicroVax II computer with a GPX workstation. Various I/O peripherals are connected to both systems. A Local Area Network (LAN) incorporating 8 user terminals and the GPX workstation has also been developed on basis of the MicroVax II. SUPARCO has also established a satellite ground receiving station at Islamabad to acquire Landsat MSS and TM, SPOT XS and Pan and NOAA AVHRR HRPT data in real-time. This station is one of the most advanced and sophisticated stations in the Asia-Pacific region. It covers, in addition to the whole of Pakistan, a large number of neighbouring countries, wholly or partially. The station has most modern facilities for data reception, preprocessing and processing, which include S and X band dish antennas, high density digital tape recorders, VAX 11/780 computers, array processors, high precision B & W and colour film recorder, etc.

Number of trainees: 1 or 2 (foreign participants)

Entry requirement: B.Sc., M.Sc. in physics, mathematics, computer science/engineering or earth sciences such as agriculture, hydrology, geology, etc.

Degree/Diploma/Certificate awarded: Certificate is awarded on successful completion of the training course

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: $US 75

Monthly room and board and incidental expenses: $US 500 per week

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Satellite remote sensing applications for earth resources and environmental surveying

Geographical preference: Developing countries of ESCAP and ESCWA regions

PHILIPPINES

INSTITUTION

NATURAL RESOURCES MANAGEMENT CENTER (NRMC)

1610 Triumph Bldg. 9th Floor, Quezon Avenue, Quezon City, Philippines

Telex: 27216 NRCM PH Tel.: 96-86-44

Contact persons: Ricardo M. Umali, and Ricardo T. Biña

Principal function(s) of institution: Research, development and training

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: The NRMC Remote Sensing Manpower Development Programme involves the organization and conduct of remote sensing training courses, workshops, symposia, seminars applicable to various natural resources disciplines
Research: Applied research in visual and computerized processing and interpretation of remotely sensed data and research in resource information handling and processing

Duration/Frequency/Language(s) of instruction: 3 weeks-1 month/Depends on availability of funds and Center's workload/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 45%/45%/10%

Facilities: Image-100 multispectral image analyser system and peripherals; UNIVAC System 80; IBM XT microcomputer, and other equipment

Number of trainees: Between 5 and 15

Entry requirements: Bachelor's degree or equivalent in their chosen fields of specialization

Degree/Diploma/Certificate awarded: Certificate of completion-professional

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Stipend: based on ESCAP approved funding for 3 weeks remote sensing training

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Research and development applications using remote sensing data in the fields of forestry, agriculture and land use, geology and aquatic/coastal resources

Geographical preference: Same climatic zones

POLAND

INSTITUTION

INSTITUTE OF GEODESY AND CARTOGRAPHY

00-950 Warsaw, ul. Jasna 2/4 Poland

Telex: 817392 COGIK PL Tel.: 270328
Fax: 048 (22) 270328

Contact persons: Prof. Bogdan Ney, Prof. Jan Konieczny, Dr. Romuald Kaczynski, Prof. Adam Linsenbarth

Principal function(s) of institution: Research, development and training

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: Data acquisition, preprocessing and processing of data (photographic, electro-optical, and electronic), analysis of remotely sensed data (analog and digital), thematic applications of remotely sensed data in geology, vegetation monitoring, forestry, land use and thematic mapping

Duration/Frequency/Language(s) of instruction: 3-12 weeks/Twice annually/English, Russian

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 50%/40%/10%/--

Facilities: Multispectral cameras, thermal scanner, additive colour viewers, analog and digital systems for data processing

Number of trainees: Between 1 and 15

Entry requirements: College/University degree

Degree/Diploma/Certificate awarded: None

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: $US 250-1,000, depending on the type of course

Monthly room and board and incidental expenses: Approx. $US 300

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: 1-2 scholarships/fellowships are available

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Remote sensing experiments using new instruments and methods for acquisition, processing and interpretation of data. Remote sensing applications in forestry, land use monitoring, geology, environmental protection

Geographical preference: --

QATAR

INSTITUTION

UNIVERSITY OF QATAR, SCIENTIFIC AND APPLIED RESEARCH CENTER (SARC), REMOTE SENSING UNIT (RSU)

P.O. Box 2713, DOHA, QATAR

Telex: 4630 UNVSTY-DH Tel.: (0974) 874961

Contact person: Dr. Jaber Al-Noaimi

Principal function(s) of institution: Research and Education

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: Application of remotely-sensed data from aircrafts and satellites to geological mapping, drainage basins, land-use pattern, coastal studies and other natural resource studies.

Duration/Frequency/Language(s) of instruction:

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research:

Facilities: ERDAS system installed on a PC with the basic peripherals, NEC Colour Data Analysis System.

Number of trainees: Between 2 and 5

Entry requirements: B.Sc in Geology, Oceanography or Civil Engineering

Degree/Diploma/Certificate awarded: Professional

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material:

Monthly room and board and incidental expenses:

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Remote Sensing

Geographical preference: Arab countries of the Gulf Cooperative Council (GCC)

RUSSIAN FEDERATION

INSTITUTION

MOSCOW ENGINEERING INSTITUTE FOR GEODESY, CARTOGRAPHY AND AERIAL PHOTOGRAPHY

Moscow, Russia

Telex: -- Tel.: -- Cable: --

Contact person: Director

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Geodesy, aerial photography, photogrammetry, air surveying electronics, photo-interpretation, cartography
Research: --

Duration/Frequency/Language(s) of instruction: 6 years/Annually/Russian (candidates who are not able to speak the Russian language shall undergo a one-year instruction in that language)

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 35%/35%/35%/--

Facilities: --

Number of trainees: --

Entry requirements: Completed secondary education; age of the candidate should not exceed 25 years

Degree/Diploma/Certificate awarded: M.Sc., M. Eng.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: 10 fellowships per year under the auspices of the United Nations Programme on Space Applications (provision of monthly allowances, medical expenses, travel to home country after completion)

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Areas mentioned above

Geographical preference: None

SAUDI ARABIA

INSTITUTION

SAUDI CENTER FOR REMOTE SENSING

King Abdulaziz City for Science and Technology (KACST), Kingdom of Saudi Arabia

Telex: 404017 SCITEC SJ Tel.: (966 1) 481-1141
Fax: (966 1) 488-3756 Cable: MAWSOAH

Contact person: --

Principal function(s) of institution: Applied research, R & D

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: Remote sensing applications, supporting National Development Plans and Academic Research in Education

Duration/Frequency/Language(s) of instruction: --

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --

Facilities: Image processing systems, Receiving Station

Number of trainees: --

Entry requirements: --

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Remote sensing

Geographical preference: Yes, due to availability of data in the Centre.

SINGAPORE

INSTITUTION

NATIONAL UNIVERSITY OF SINGAPORE

10 Kent Ridge Crescent, Singapore 0511, Republic of Singapore

Telex: UNISPO RS 33943 Tel.: 7756666 Cable: UNIVSPORE

Contact person: Mr. Y. S. Chong

Principal function(s) of institution: The University offers courses leading to first degrees and higher degrees in eight faculties and four post-graduate schools. There are also three specialist centres for advanced training and research.

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Since 1978, Satellite Remote Sensing has been included in the list of topics that can be chosen by students: (a) as a subject in the fourth year in the Department of Physics; (b) as a one year project in partial fulfilment for the degree of B.Sc. with Honours in Physics; (c) as a research field for students pursuing the M.Sc. or Ph.D. degree.
Research: The National University of Singapore participated in the Marine Observation Satellite (MOS-1) Verification Programme sponsored by the National Space Development Agency of Japan. The NUS programme has the reference number NASDA MOS-1 VP Serial No. 109. A study of the environment on a regional basis using NOAA/AVHRR data acquired by the NOAA/GMS satellite ground receiving station in Singapore, in combination with the data from Landsat, SPOT, MOS, IRS, ERS and JERS.

Duration/Frequency/Language(s) of instruction: 1 year/Every year/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: Variable.

Facilities: Facilities for digital processing of remote sensing data are available at the National University of Singapore. The NUS Department of Physics has developed software for use on general purpose micro-, mini- and main frame computers. The Department has a Silicon Graphics Personal IRIS Workstation. This workstation as well as numerous micro-computers are linked to a IBM 3090 Main Frame Computer, and through it, to the NEC SX-1A supercomputer.

Singapore receives data on a near continuous basis from the Geostationary Meteorological Satellite (GMS) which forms part of the system of operational geostationary satellites viewing the whole earth.

Singapore is also within the field of view of Indsat, another geostationary satellite of the system over the Indian Ocean.

The data from the GMS as well as data from the polar orbiting NOAA satellites are received by a satellite ground receiving station situation at Changi Airport.

Number of trainees: between 6 and 30

Entry requirements: B.Sc. degree

Degree/Diploma/Certificate awarded: M.Sc. diploma

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Study of the environmental changes on a regional and global basis using satellite remote sensing data.

Geographical preference: --

SOUTH AFRICA

INSTITUTION

COUNCIL FOR SCIENTIFIC AND INDUSTRIAL RESEARCH (CSIR)

P.0. Box 395, Pretoria 0001, South Africa

Telex: 3-12312 Tel.: 869211

Contact persons: Prof. D.A. Scogings/Mr. S.E. Piper, Dept. of Surveying and Mapping, University of Natal, King George V Avenue, 4001, Durban

Principal function(s) of institution: --

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: An introductory course in remote sensing is offered annually, usually at the University of Natal or, alternatively, at the University of Cape Town. The course covers basic principles of remote sensing, with an emphasis on satellite data and digital image processing thereof
Research: Projects are funded in the following fields: agriculture, forestry, hydrology, land cover mapping, natural vegetation, geosciences, oceanography, data processing techniques and algorithm development

Duration/Freguency/Language(s) of instruction: 1 week/Annually/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 80%/15%/5%

Facilities: Direct reception of LANDSAT MSS data, image processing facilities available at various CSIR Institutes: Satellite Remote Sensing Centre, National Physical Research Laboratory, National Institute for Informatics and National Research Institute for Oceanology

Number of trainees: Between 8 and 15

Entry requirements: Appropriate involvement or experience in remote sensing

Degree/Diploma/Certificate awarded: None

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: R 250

Monthly room and board and incidental expenses: Can be arranged at University residence at R 20/day

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: Funds are available to support visiting scientists to work in fields of mutual interest

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Agriculture, forestry, natural vegetation, hydrology, land cover mapping, oceanography, geosciences, image processing techniques, monitoring programmes (e.g., drought, vegetation, degradation, urban growth)

Geographical preference: Southern Africa

SRI LANKA

INSTITUTION

ARTHUR C. CLARKE CENTRE FOR MODERN TECHNOLOGIES

Katubedda, Moratuwa, Sri Lanka

Telex: 22583 ACC CE Tel.: 94(1) 507461,507462,546546 Fax: 94(1) 507462

Contact person: Mr. S.D.F.C. Nanayakkara, Deputy Director

Principal function(s) of institution: To accelerate the process of introduction and development of modern technologies in the fields of communications, computers, space technologies, energy and robotics through the provision of training and research facilities

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: In the field of Space Applications: Remote sensing for earth resources, oceanography and environment; overview of the principles of remote sensing applications and geographic information systems. Except for two courses at basic level, the others are in the planning stage
Research: Planned research includes: satellite data application for monitoring rice crop, fisheries, coastal monitoring and water management

Duration/Frequency/Language(s) of instruction: 4 weeks/Annually/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 50%/10%/20%/20% - varies from course to course

Facilities: The Centre is making arrangements to equip the remote sensing laboratories based on a modern computer system. In the meantime, the Centre is evaluating and planning to install reception processing equipment for NOAA, AVHRR Satellite data. The Centre has access to the Centre for Remote Sensing (CRS) at the Survey Department. The Survey Department owns an Erdas system, APY system, Wild RC8 camera, aircraft (Cessna Golden Eagle 421C) and facilities for photogrammetric, photographic (B&W), analog processing and cartographic activities. The CRS has an archive of aerial photographs, series of topographic maps, land use maps and Landsat and SPOT data

Number of trainees: Around 25

Entry requirements: Mathematics and Sciences - level of achievement varies for different courses

Degree/Diploma/Certificate awarded: Certificate

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Nominal - variable depending on course

Monthly room and board and incidental expenses: To be arranged by the participant

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Remote sensing, geographic information systems

Geographic preference: Asia and Pacific Region

SWEDEN

A. INSTITUTION

SWEDISH NATIONAL SPACE BOARD

Box 4006, S-171 04 Solna, Sweden

Telex: 17128 SPACECO S Tel.: 46 8 627 64 80
Fax: 48 8 627 5014

Contact person: --

Principal function(s) of institution: Central planning and funding agency for Swedish space activities

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: The Swedish remote sensing programme is carried out at different institutes and university groups. It concentrates on digital image processing and analysis, physical background of spectral and spatial signatures and microwave technique. Areas for remote sensing applications are: forestry, geology, meteorology, oceanography and hydrology, satellite data cartography, geographical information systems

Duration/Frequency/Language(s) of instruction: --/--/--

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --/--/--/--

Facilities: --

Number of trainees: --

Entry requirements: B.Sc.

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: Contact Swedish Institute, Box 7434, S-103 91, Stockholm or Swedish Embassy

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Contact Board for further information

Geographical preference: --

B. INSTITUTION

SWEDISH SPACE CORPORATION

P.O. Box 4207, S-171 04 Solna, Sweden

Telex: 17128 SPACECO
Tel.: 46 8 627 6200
Fax: 46 8 987 069
Cable: SPACECORP STOCKHOLM

Contact person: Hakan Hedberg

Principal function(s) of institution: From feasibility studies to the practical application of space-related technology

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
-fundamentals of remote sensing (4 weeks summer school)
-remote sensing principles and techniques (1-5 weeks)
-satellites and sensors systems (1 week)
-ground receiving stations (6 weeks)
-photo lab practice (4 weeks)
-remote sensing applications (geology, forestry, water resources, etc.)
-digital image processing (3 days-2 weeks)
-image processing systems
-geographical information systems
-maritime surveillance systems

Duration/Frequency/Language(s) of instruction: 3 days-6 weeks/1-12 times Annually/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research:25%/75%/--/--

Facilities: Receiving station for LANDSAT and SPOT. Preprocessing systems. Image analysis systems. GIS-systems. Photolabs etc.

Number of trainees: Up to 30

Entry requirements: Depending on course. University degree, executive experience

Degree/Diploma/Certificate awarded: Certificates

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Separate quotations

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Case by case aid opportunities

Other financial support available for foreign participants: Case by case

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: All practical aspects of remote sensing

Geographical preference: None

C. INSTITUTION

CHALMERS UNIVERSITY OF TECHNOLOGY, DEPARTMENT OF RADIO AND SPACE SCIENCE

S-412 96 Göteborg, Sweden

Telex: 854-2400 Tel.: 46-31810100

Contact person: Prof. J. Askne

Principal function(s) of institution: Technical university: instruction and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Wave propagation, including remote sensing for M.Sc. programme
Research: Microwave remote sensing applied to meteorology and oceanography

Duration/Frequency/Language(s) of instruction: 6 hrs a week/Annually/Swedish, English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 80%/20%/--/--

Facilities: Co-operating group for receiver developments, radiometer 52-58 GHz, computer facilities

Number of trainees: 1

Entry requirements: B.Sc.

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: No tuition, but the number of foreign students is limited

Monthly room and board and incidental expenses: $US 350

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: Contact Swedish Institute, Box 434, S-103 91, Stockholm

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Related to ongoing research activities as stated above

Geographical preference: --

D. INSTITUTION

STOCKHOLM UNIVERSITY, DEPARTMENT OF PHYSICAL GEOGRAPHY

S-106 91 Stockholm, Sweden

Telex: 8105199 Univers   Tel.: 46 8 162000
Fax: 46 8 164818   Cable: UNIVERSITY, STOCKHOLM

Contact person: Mr. Dag Asvarn

Principal function(s) of institution: Education (full academic range). R & D. In-service training of teachers and government officers

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses:
B.Sc. level: Yearly five-week full-time courses in air photo interpretation, satellite remote sensing (digital interpretation), GIS.
Ph.D. level: Yearly five-week course in digital satellite remote sensing. All remote sensing courses are tailor-made to fit various student needs according to specialization, e.g. geology, vegetation mapping, etc.
Also, yearly international five-week full time course in remote sensing, under the auspices of the United Nations and the Government of Sweden. The course is organized for university and technical college teachers from Africa, South-East Asia and Latin America.
Research: Developing remote sensing methods for the inventory of natural resources and monitoring for environmental protection. Activities include: IR aerial photo interpretation, digital image analysis of TM, SPOT and other earth resources satellites, thermography from aircraft and satellites and studies of spectral and spatial signatures of various natural objects. Computer cartography and GIS development (R&D).

Duration/Frequency/Language(s) of instruction: Five weeks full time/Every year/Swedish (English - UN course)

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 30%/70%/--/--

Facilities: Ample equipment ranging from pocket stereoscopes to state-of-the-art GIS, image processing and analysis systems. Most equipment stationed in RS lab, but some equipment is mobile.

Number of trainees: Courses in Swedish: 16; international course: 24

Entry requirements: B.Sc. level: one-term full-time course in Earth Science or equivalent. Ph.D. and international course: B.Sc./M.Sc. or equivalent.

Degree/Diploma/Certificate awarded: International course: professional. All other courses: academic.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Free tuition; books, etc. at $US 50.

Monthly room and board and incidental expenses: $US 1,000

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Yes.

Other financial support available for foreign participants: Yes. Varies. Generally fellowships, if at all given, will cover expenses for everything but tuition, which is free. A typical fellowship amount is up to $US 1,000, which covers costs of living.

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Remote sensing for natural resources management and monitoring for environmental protection

Geographical preference: Eastern and Southern Africa.

SYRIAN ARAB REPUBLIC

INSTITUTION

GENERAL ORGANIZATION OF REMOTE SENSING (GORS)

P.0. Box 12586, Damascus, Syrian Arab Republic

Telex: 411590 SY NRSC Tel.: 218765

Contact person: Prof. Dr. Eng. Hussein Ibrahim

Principal function(s) of institution: Research, development, training and applications

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Short-term training courses on remote sensing techniques and their applications at national, regional and international levels
Research: Survey, meteorology, agriculture, geology, hydrology, mineral deposits, petroleum, urbanism, regional planning and environment

Duration/Frequency/Language(s) of instruction: 4-8 weeks/Annually/Arabic, English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 50%/35%/15%

Facilities: GORS is designed to offer facilities required for scientific, living and recreational purposes

Number of trainees: Between 20 and 30

Entry requirements: Undergraduate

Degree/Diploma/Certificate awarded: Professional degree

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: No charges

Monthly room and board and incidental expenses: $US 1,000

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Receive trainees, especially from Arab countries to participate in implementing national projects, especially those related to the Arab countries

Geographical preference: Countries of the League of Arab States

THAILAND

A. INSTITUTION

NATIONAL RESEARCH COUNCIL

196 Phahonyothin Road, Bangkok 10900, Thailand

Telex: 82213 Tel.: 662-561-0619
Fax: 662-561-3035 Cable: NRC BANGKOK

Contact person: Dr. Suvit Vibulsresth, Deputy Secretary-General

Principal function(s) of institution: Training and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses:
(a) Training course on basic remote sensing
(b) Training course on digital image processing
(c) Training course/symposium on specific theme related to satellite application
Research: Application of remotely sensed data to various disciplines, such as forestry, land use, water resources, mapping, geology, oceanography and environmental monitoring

Duration/Frequency/Language(s) of instruction:
a) 4 weeks/Annually/Thai
b) 3 weeks/Annually/Thai
c) 1-2 weeks to 1-2 months/Occasionally/English or Thai

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research:
(a) 30%/40%/30%/--
(b) 39%/44%/17%/--

Facilities: Conference room with capacity to accommodate up to 200 participants; DIPIX digital image processing system, MERIDIAN image analysis system, SPANS GIS system, Procom 2 reflector; Landsat, SPOT and MOS-1 ground receiving stations

Number of trainees: Between 10 and 40

Entry requirements: First degree in Basic or Earth Sciences

Degree/Diploma/Certificate awarded: Professional certificate

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Joint research, share researchfacilities, host training course/seminar/conference/symposium with external financial support

Geographical preference: --

B. INSTITUTION

KASETSART UNIVERSITY, FACULTY OF FORESTRY

Bangkhen, Bangkok 10900, Thailand

Telex: 21957 RECOFTCTH Tel.: 579-0170 Fax: 561-4761

Contact person: Dr. Niwat Ruangpanit

Principal function(s) of institution: Education, research and development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: Application of remote sensing in forestry and land use studies

Duration/Freguency/Language(s) of instruction: 4 months/1 semester a year/Thai

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 32 hours/48 hours/2 days/--

Facilities: Up-to-date LANDSAT imageries and equipment for both visual interpretation and digital image processing

Number of trainees: Between 10 and 15

Entry requirements: B.Sc. (in forestry)

Degree/Diploma/Certificate awarded: M.Sc.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: $US 250 a semester

Monthly room and board and incidental expenses: $US 400

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: United Nations/ESCAP, FAO, UNDP and UNFP

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Application of remote sensing for national and regional vegetation mapping

Geographical preference: Asia and Pacific regions

TRINIDAD AND TOBAGO

INSTITUTION

INSTITUTE OF MARINE AFFAIRS

P.O. Box 3160, Carenage Post Office, Trinidad and Tobago

Tel.: 809-634-4291/4 Fax: 809-634-4433 Cable: MARINAF

Contact person: Alan Duncan, Chief Information Officer

Principal function(s) of institution: Marine research (fundamental and applied), education, training

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: Processing, analysis and interpretation of data supplied on computer compatible tapes (CCTs) for geographical areas of interest to Trinidad and Tobago. The RS facility is expected to become operational early in 1992. In due course training will be provided for suitably qualified participants from the English-speaking Caribbean countries.

Duration/Frequency/Language(s) of instruction: --

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --

Facilities: The basic computer hardware/software and CCTs have been ordered and are in varying stages of delivery.

Number of trainees: To be determined.

Entry requirements: An undergraduate degree in the natural sciences or mathematics

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Remote sensing applications and training

Geographical preference: --

TURKEY

INSTITUTION

TÜBITAK MARMARA RESEARCH CENTER, SPACE SCIENCES DEPARTMENT

P.O. Box 21, Gebze-Kocaeli, Turkey

Telex: 34 123 mae tr Tel.: (199) 12300

Contact person: Head, Space Sciences Department

Principal function(s) of institution: Research, development and applications

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Research: Develop algorithms for digital processing of remote sensing data, mainly in image enhancement, filtering and classification, radio astronomy, astrophysics
Applications: Agriculture, land-use and environmental issues using Landsat MSS and TM data, radar

Duration/Frequency/Language(s) of instruction: --/--/--

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --/--/--/--

Facilities: VAX 11/780, I^2S model 75 image processing system, Trilog colour plotter, software, Sun 470 workstation and its peripherals

Number of trainees: --

Entry requirements: --

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: There are opportunities for short and long term participation in activities.

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Image processing, remote sensing, radio astronomy, astrophysics

Geographical preference: None

UGANDA

A. INSTITUTION

DEPARTMENT OF METEOROLOGY

P.O. Box 7025, Kampala, Uganda

Tel.: 256-41-258537 Fax: 256-41-256166

Contact person: Mr. S.A.K. Magezi

Principal function(s) of institution: Meteorology (including research and training)

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: Radar meteorology and cloud search - Basic studies

Duration/Frequency/Language(s) of instruction: 3 months/Annual/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 10%/5%/--/--

Facilities: Meteorological training school and satellite receiver equipment

Number of trainees: between 2 and 4

Entry requirements: Higher school certificate (Physics and Math)

Degree/Diploma/Certificate awarded: Professional

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Variable

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Study tours and research findings exchange

Geographical preference: --

B. INSTITUTION

SURVEY TRAINING SCHOOL

P.O. Box 89, Entebbe, Uganda

Tel.: 20842

Contact person: Commissioner, Dept. of S & M

Principal function(s) of institution: Training

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: This subject has been recently introduced and is taught up to 3rd year (diploma level).

Duration/Frequency/Language(s) of instruction: 2 year/Weekly/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 2 hours/--/4 hours/--

Facilities: --

Number of trainees: between 15 and 20

Entry requirements: Credit passes in English, Math, Geography and Phys/Physical Science

Degree/Diploma/Certificate awarded: Diploma

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: $US 1,000 per student per year

Monthly room and board and incidental expenses: $US 1,000

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Remote sensing

Geographical preference: RCSSMRS, Kenya

UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND

A. INSTITUTION

BRITISH GEOLOGICAL SURVEY

Nicker Hill, Keyworth, Nottingham NG 12 5 GG, United Kingdom

Telex: 378173 BGS KEY G Tel.: (06077) 6111
Fax: (06077) 2193/6602

Contact person: Dr. D. Greenbaum

Principal function(s) of institution: Geological surveying and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:

Duration/Frequency/Language(s) of instruction: 3 to 6 weeks/2 per year (according to demand). Longer, individual training/research by arrangement/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 10%/90%/--/--

Facilities: I^{2}S and ERDAS interactive image processing systems; photogeological instruments

Number of trainees: Between 6 and 12

Entry requirements: Degree in geology

Degree/Diploma/Certificate awarded: Professional

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Dependent on numbers. Course texts provided.

Monthly room and board and incidental expenses: Does not usually arise as courses are given in the developing country

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: Funding may be available via ODA and British Council.

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: All aspects of geological remote sensing (including photogeology)

Geographical preference: All regions.

B. INSTITUTION

DUNDEE UNIVERSITY

Dundee DD1 4HN, Scotland, United Kingdom

Telex: 9312110826 DUG Tel.: 382 23181 Fax: 382-202830

Contact person: Dr. Ravaughan, Department of Applied Physics and Electronic and Manufacturing Engineering, Dundee University

Principal function(s) of institution: Training and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: M.Sc. course in remote sensing, image processing and applications; Dip. Sc. course in digital mapping and remote sensing

Duration/Frequency/Language(s) of instruction: 1 year M.Sc.; 9 months Dip. Sc./Annually/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 25%/20%/5%/50%

Facilities: Fully equipped teaching laboratories, computing facilities, image display system

Number of trainees: Between 5 and 20

Entry requirements: Degree

Degree/Diploma/Certificate awarded: M.Sc., Dip. Sc.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: 2,500 British Pounds (home and EEC); 6,630 British Pounds (overseas) (1991-92 figures)

Monthly room and board and incidental expenses: 500 British Pounds

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Yes

Other financial support available for foreign participants: ODA/British Council; must be applied for in foreign applicant's own country

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Atmospheric effects, bathymetry, underground coal fires, geological studies, sea surface temperatures, software development, education and training

Geographical preference: None

C. INSTITUTION

INSTITUTE OF OCEANOGRAPHIC SCIENCES

Wormley, Godalming, Surrey GU8 5UB, United Kingdom

Telex: 858833 Tel.: (042 879) 4141 Cable: OCEANS

Contact person: Dr. T.D. Allan

Principal function(s) of institution: Research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: No formal teaching. Research scientists or post-graduates can be accommodated at the Institute for short stays

Duration/Frequency/Language(s) of instruction: --/--/--

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --/--/--/--

Facilities: Image processors, computer programmes, plotters, etc.

Number of trainees: Between 1 and 2

Entry requirements: Prefer Ph.D. in physics, geology and oceanography

Degree/Diploma/Certificate awarded: None

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: None

Monthly room and board and incidental expenses: 100 British Pounds per week

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Remote sensing, especially over the North Atlantic and/or Mediterranean Sea

Geographical preference: North Atlantic, Mediterranean Sea

D. INSTITUTION

NATIONAL REMOTE SENSING CENTRE LIMITED

North Gate Road, Farnborough, Hampshire, GU14 6TW, United Kingdom

Telex: 859891 Tel.: 0252 541464 Cable: --

Contact person: Mr. Neil Pattie

Principal function(s) of institution: Supply of products and services based on information derived from data acquired by earth observation satellites and sensors.

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Research: Research and development in all aspects of remote sensing of the Earth, including image processing, image classification techniques and applications of all types of satellite remote sensing data. Research into applications of GIS and integration of remotely sensed data into GIS.

Duration/Frequency/Language(s) of instruction: --/--/--

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --/--/--/--

Facilities: Data archives, image processing equipment, computer systems

Number of trainees: --

Entry requirements: --

Degree/Diploma/Certificate awarded: None

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Possible

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: No

Specific areas of interest: --

Geographical preference: --

E. INSTITUTION

NATURAL ENVIRONMENT RESEARCH COUNCIL, INSTITUTE OF TERRESTRIAL ECOLOGY

Environmental Information Centre, Monks Wood Experimental Station, Abbots Ripton, Huntingdon, Cambs PE17 2LS, United Kingdom

Telex: 32416 Tel.: 048 73 381 Cable: --

Contact person: Dr. B.K. Wyatt

Principal function(s) of institution: Research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Research: Use of remote sensing for land-cover mapping and monitoring; vegetation community mapping and habitat studies; biomass estimation; grassland ecosystem studies; rangeland management

Duration/Frequency/Language(s) of instruction: --/--/--

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --/40%/10%/--

Facilities: Image analysis equipment (I^2S Model 75); local area network based on micro VAX processors, with network connection to various mainframes; photographic processing facilities; access to United Kingdom Image Archives; photointerpretation facilities; ecological research laboratories; arrangements for joint training with Silsoe College and with Department of Geography at Cambridge University

Number of trainees: Between 1 and 3

Entry requirements: First degree in an environmental science

Degree/Diploma/Certificate awarded: M.Sc. or Ph.D.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Between 1,600 British Pounds and 4,000 British Pounds per year

Monthly room and board and incidental expenses: Between 3,000 British Pounds and 3,500 British Pounds per year

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Variable (British Council)

Other financial support available for foreign participants: Various aid agencies

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: See above

Geographical preference: Africa

F. INSTITUTION

SILSOE COLLEGE

Silsoe Bedford MK 45 4DT, United Kingdom

Telex: 825072 CITECH G Tel.: 0525-60428 Cable: --

Contact person: Dr. J.C. Taylor

Principal function(s) of institution: Training, education, research and development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Extensive theoretical and practical work is done in courses; in land-resource-based courses, 3 out of 10 blocks are remotely sensed and each has 20 lectures and up to 60 hours practical work with both hard copy and image processing machines

Duration/Frequency/Language(s) of instruction: 1 x 10 weeks/Annually/English with possibility of presentation in Portuguese

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 35%/55%/5%/5% (for students)

Facilities: Mirror stereoscope Interpretoscope Fairey Colour Additive Viewer, CP1 plotter radial line plotter, slot cutter device for radial line work x 2 GEMS image analyzer; vast resources of photographic and satellite hard copy, maps through the Regional Centre of the National Remote Sensing Centre, CCTs of Landsat data

Number of trainees: 60

Entry requirements: Diploma 2ii hons., a lower qualification is acceptable for strongly motivated students; M.Sc. 2 i or 1

Degree/Diploma/Certificate awarded: Yes

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: About 8,000 British Pounds per year excluding accommodation for non-EEC students

Monthly room and board and incidental expenses: 240 British Pounds per month; British Council award

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None specified; usually British Council funds overseas students

Other financial support available for foreign participants: FAO, B.C. AID awards, Ford Foundation, etc.

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: --

Geographical preference: Niger, Brazil, Kenya, Nigeria, Saudi Arabia, Zimbabwe

G. INSTITUTION

UNIVERSITY COLLEGE LONDON, DEPARTMENT OF PHOTOGRAMMETRY AND SURVEYING

Gower Street, London WC1E 6BT, United Kingdom

Telex: 296273 Tel.: 01-387-7050 Cable: --

Contact person: Prof. I.J. Dowman

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: M.Sc. in remote sensing; M.Sc. in photogrammetry; M.Sc. in Geodesy; M.Sc. in geographical and geodetic information systems.

Duration/Frequency/Language(s) of instruction: 1 year/Annually/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 30%/30%/--/40%

Facilities: Image processing (I^2S); photogrammetric equipment; SUN workstations; VAX II GPX; image processing and GIS software packages.

Number of trainees: Remote sensing - between 10 and 20; Photogrammetry - between 3 and 12; Geodesy - 4-8; GGIS - 5-15.

Entry requirements: 1st degree IIii class

Degree/Diploma/Certificate awarded: M.Sc. and diploma (Academic)

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: 2,104 British Pounds (home students); 7,775 British Pounds (overseas)

Monthly room and board and incidental expenses: Between 400 and 500 British Pounds

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Mapping

Geographical preference: Egypt, Middle East, Malaysia

H. INSTITUTION

UNIVERSITY OF ASTON, REMOTE SENSING UNIT

Department of Civil Engineering, Aston University, Birmingham B4 7ET,
United Kingdom

Telex: 336997 Tel.: 021-359-3611 Fax: 021-333-3389

Contact person: Dr. W. Gordon Collins

Principal function(s) of institution: Research, education, training, consultancy

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: (i) specialized training in remote sensing, 1 month to 1 year; (ii) post graduate research for higher degrees
Research: Remote sensing applications to land and water resources, natural resources

Duration/Frequency/Language(s) of instruction: Training: 1-12 months/on demand/English; Research: 2-4 years/every year/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: Training: 30%/30%/10%/30%; Research: 10%/20%/10%/60%

Facilities: Adequate equipment for using aerial photographs and digital satellite images, for Earth and environmental sciences and GIS.

Number of trainees: Between 1 and 10

Entry requirements: Training: none; Research: First degree in relevant subject

Degree/Diploma/Certificate awarded: M. Phil. or Ph.D. degree

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Mapping

Geographical preference: Egypt, Middle East, Malaysia

H. INSTITUTION

UNIVERSITY OF ASTON, REMOTE SENSING UNIT

Department of Civil Engineering, Aston University, Birmingham B4 7ET,
United Kingdom

Telex: 336997 Tel.: 021-359-3611 Fax: 021-333-3389

Contact person: Dr. W. Gordon Collins

Principal function(s) of institution: Research, education, training, consultancy

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: (i) specialized training in remote sensing, 1 month to 1 year; (ii) post graduate research for higher degrees
Research: Remote sensing applications to land and water resources, natural resources

Duration/Frequency/Language(s) of instruction: Training: 1-12 months/on demand/English; Research: 2-4 years/every year/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: Training: 30%/30%/10%/30%; Research: 10%/20%/10%/60%

Facilities: Adequate equipment for using aerial photographs and digital satellite images, for Earth and environmental sciences and GIS.

Number of trainees: Between 1 and 10

Entry requirements: Training: none; Research: First degree in relevant subject

Degree/Diploma/Certificate awarded: M. Phil. or Ph.D. degree

Facilities: Network of SUNs equipped with ERDAS, LUCID, GRAS, ARC-INFO and other RS and GIS software packages; TDS HR-48/OPUS PC digitizing system and supporting; peripheral and additional equipment: Joyce Loebl scanning microdensitometer; analytical 16-MM projector, etc.; access to University Optronics Protoscan and Magiscan systems. Meteosat PDUS, DMSP-SSM/1PB2 systems

Number of trainees: Between 6 and 12

Entry requirements: Matriculation (undergraduate); good honours Bachelor's degree (postgraduate)

Degree/Diploma/Certificate awarded: M.Sc., Ph.D.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Negotiated with University of Bristol

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: Details available from British Council; World University Service, etc.

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Development of integrated algorithms for operational use to solve atmosphere-related problems at the Earth's surface with applications in meteorology, climatology, hydrology, oceanography, land use, agriculture and geology.

Geographical preference: Africa, South America, Middle East, Asia

J. INSTITUTION

UNIVERSITY OF LONDON, SCHOOL OF ORIENTAL AND AFRICAN STUDIES

Thornhaugh St., London WC1H OXG, United Kingdom

Telex: 262433 Tel.: 01-6372388 Fax: 071-4363844

Contact person: Dr. J.A. Allan

Principal function(s) of institution: Education, research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Undergraduate course in remote sensing; M.Sc. programmes in remote sensing and GGIS.
Research: Remote sensing applied to land and water inventory and monitoring especially in the Middle East and North Africa; data capture, data processing, terrain modelling, RS data applications.

Duration/Frequency/Language(s) of instruction: 9 months/Annually/English; M.Sc. programmes: 12 months/annually/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 50%/40%/10%/--; M.Sc. programme: 30%/20%/10%/40%

Facilities: Equipment for photo-interpretation, stereoscopes; access to I^2S digital image processing equipment; SUN workstations; IBM and Apple PCs.

Number of trainees: Between 10 and 25

Entry requirements: Must be a member of a second or third course in London University; M.Sc. programme - good first degree in science or environmental sciences

Degree/Diploma/Certificate awarded: The course is a unit (Approx. 1/10) of a London degree; M.Sc.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Part of fees, approx. 300 British Pounds; M.Sc. programmes - 6,500 British Pounds (1991)

Monthly room and board and incidental expenses: M.Sc. - 500 British Pounds

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Through British Council

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES

Specific areas of interest: Renewable resource monitoring in Asia and Africa

Geographical preference: Middle East and North Africa

K. INSTITUTION

UNIVERSITY OF BRADFORD, DEPARTMENT OF COMPUTING

Phoenix Building, University of Bradford, BD7 IDP, United Kingdom

Telex: 51309 UNIBFD G Tel.: 44-274-383951
Fax: 44-274-383920

Contact person: Prof. J. Stephenson

Principal function(s) of institution: Education, research, development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: PC based low cost reception systems for METEOSAT/GOES/NOAA-AVARR, etc. Real time capture and image processing. Rainfall estimation from METEOSAT, MDD/DCP.
Research: Image processing tools; reliable fault tolerant capture software; automatic alarm software from series of images (storms, fires) from Meteosat/NOAA; database systems (temporal) for images

Duration/Frequency/Language(s) of instruction: --

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --

Facilities: Real time capture of Meteosat/NOAA digital data. Also of DCP/MDD data from Meteosat. Extensive PC based image processing systems. Also many SUN-UNIX systems.

Number of trainees: Variable

Entry requirements: Good degree including computing

Degree/Diploma/Certificate awarded: M.Phil/Ph.D.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Standard research student fee (approx. 6,000 British Pounds per annum for non-EEC)

Monthly room and board and incidental expenses: 400 British Pounds per month

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Yes

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: --

Geographical preference: None

L. INSTITUTION

UNIVERSITY OF BRADFORD, DEPARTMENT OF ELECTRICAL ENGINEERING

Richmond Road, Bradford BD7 1 DP, United Kingdom

Telex: 51309 UNIBFD G Tel.: 44 274 733466

Contact person: Dr. P.S. Excell

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: Included in Senior year undergraduate courses on Imaging and Radar; Research in detection and quantification of sand and dust storms using LANDSAT/ERS-1, etc.; Research in basic scattering properties (microwave to optical) of atmospheric particulates

Duration/Frequency/Language(s) of instruction: 2 weeks/yearly/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 50%/10%/--/40%

Facilities: Archive of LANDSAT images; image processing facilities; optical propagation software. Airborne transmitter, vehicle equipped as receiver, Microwave laboratories, Anecholic chambers, Simulation software, Oxenhope Moor Experimental Station. Satellite receivers, image processing facilities.

Number of trainees: --

Entry requirements: B.Sc.

Degree/Diploma/Certificate awarded: M.Sc., M.Phil., Ph.D.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: 6,500 British Pounds per annum

Monthly room and board and incidental expenses: Approximately 1,000 British Pounds

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: –

Geographical preference: None

M. INSTITUTION

UNIVERSITY OF EDINBURGH, DEPARTMENT OF METEOROLOGY

King's Buildings, Edinburgh, United Kingdom

Telex: 8-4466 Tel.: 031-650-5101 Cable: –

Contact person: Head of Department

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: M.Sc. in Remote Sensing and Image Processing Technology
Research: Research into (i) stratospheric compositions and dynamics using satellites, (ii) radiative transfer in the atmosphere, (iii) strategies for using satellite data in ocean models

Duration/Frequency/Language(s) of instruction: 12 months/every year/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 33/17/-/50

Facilities: Computer hardware, data links, image processing systems, Meteosat receiver

Number of trainees: up to 5

Entry requirements: Honours degree in Physical Science or Mathematics

Degree/Diploma/Certificate awarded: M.Sc. or diploma for taught programme; Ph.D. or M.Phil. for research.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: 7,000 British Pounds for non-EC participants

Monthly room and board and incidental expenses: 330 British Pounds

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: Yes. ORS (difference between overseas and home fees); British Council (full costs)

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Could be negotiated

Geographical preference: --

N. INSTITUTION

UNIVERSITY OF GLASGOW, DEPARTMENT OF GEOGRAPHY & TOPOGRAPHIC SCIENCE

Glasgow G12 8QQ, United Kingdom
Telex: 777070 UNIGLA Tel.: 44-41-339-8855 Cable: --

Contact person: David A. Tout (undergraduate programme); John W. Shearer (postgraduate programme)

Principal function(s) of institution: Education

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Part of undergraduate Degree in Topographic Science; Postgraduate diploma in Photogrammetry and Remote Sensing
Research: Use of Remote Sensing in Topographic mapping, especially in developing countries

Duration/Frequency/Language(s) of instruction: UG-4 year degree/Annual/English; PG-1 year Diploma/Annual/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 10%/10%

Facilities: Photogrammetric plotting instruments, Image Processing, extensive computing equipment

Number of trainees:

Entry requirements: University Entrance or Previous Degree

Degree/Diploma/Certificate awarded:

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Variable

Monthly room and board and incidental expenses: Variable

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Yes

Other financial support available for foreign participants: Yes. Variable

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Remote Sensing

Geographical preference: --

O. INSTITUTION

KEELE UNIVERSITY

Keele, Staffordshire, United Kingdom
Telex: 36113 UNKLID G Tel.: 0782 621111 Cable: --

Contact person: Dr. A.J. Parsons

Principal function(s) of institution: Education and Research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Taught within Geography course in 2nd and 3rd years for Post Graduate Students
Research: Urban land-use studies/Archaeological studies/Agricultural studies

Duration/Frequency/Language(s) of instruction: (i) 12 weeks, (ii) 18 weeks/yearly/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 63%/25%/-/12%

Facilities: Image Processing Software

Number of trainees: Up to 10

Entry requirements: Matriculation

Degree/Diploma/Certificate awarded: Bachelor's, Master's & Doctoral Degrees

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material:

Monthly room and board and incidental expenses: Ł300

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Urban land-use and archaeological studies, agricultural studies

Geographical preference: None

P. INSTITUTION

UNIVERSITY OF NOTTINGHAM, INSTITUTE OF ENGINEERING, SURVEYING AND SPACE GEODESY

University Park, Nottingham, NG7 2RD, United Kingdom
Telex: 37346 UNINOT G Tel.: 0602 484848 Cable: --

Contact person: Dr. M.J. Smith, Admission Coordinator

Principal function(s) of institution: Education and Research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: MSc in GIS
Research: Remote sensing, image processing, environmental impact assessment, artificial intelligence. Land use planning, coastal and marine applications

Duration/Frequency/Language(s) of instruction:
MSc courses/yearly/English
Research/Annual Intake/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research:
MSc courses: 40%/10%/10%/40%
Research: 10%/-/-/90%

Facilities: GPS receivers (Geodetic), computer facilities and software (in-house)

Number of trainees: Between 4 and 10

Entry requirements: MSc courses - first degree (BSc) or equivalent; Research - good first degree

Degree/Diploma/Certificate awarded: MSc - MSc Degree, Research - MPHIL or PhD Degree

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: MSc: EC Students £2104, Overseas £6630; Research: £2104, Overseas £6630

Monthly room and board and incidental expenses:

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: Yes. ODASS, ETC

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: --

Geographical preference: --

R. INSTITUTION

UNIVERSITY OF READING, DEPARTMENT OF METEOROLOGY

2 Earley Gate. Reading RG6 2AU, United Kingdom
Telex: 847813 (RULIB) Tel.: 0734 875123 Cable: --

Contact person: Mr. G. Dugdale

Principal function(s) of institution: Education and Research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Short lecture courses within B.Sc. and M.Sc programmes in meteorology.
Research: Research on applications of data from meteorological satellites in agriculture and hydrology in Africa.

Duration/Frequency/Language(s) of instruction:
30 hours/annually/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research:

Facilities: Meteosat & NOAA AVHRR receivers; GEMSOFT and SUN workstation

Number of trainees: Up to 12

Entry requirements: BSc

Degree/Diploma/Certificate awarded: None

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses:

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign articipants:

Other financial support available for foreign participants:

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest:

Geographical preference: None

S. INSTITUTION

UNIVERSITY OF SHEFFIELD, DEPARTMENT OF GEOGRAPHY

University of Sheffield, 510 2TN U.K.

Telex: -- Tel.: 0742 768555
Fax.: (0742) 722199

Contact person: Dr. C.D. Clark

Principal function(s) of institution: Education and Research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Two taught courses, aimed at 2nd and 3rd year undergraduates, but also available as a diploma course
Research: Research activity in a large-scale geography, particularly glacial, and in marine applications. Any research activity considered.

Duration/Frequency/Language(s) of instruction:
6 months/every year/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 45%/30%/9%/16%

Facilities: Remote Sensing/GIS laboratory including Sun workstations running ERDAS and ARC/INFO. Two teaching/ research staff.

Number of trainees: Up to 20

Entry requirements: Degree in Science, Earth Science or similar.

Degree/Diploma/Certificate awarded: Diploma, M.Phil, PhD

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material:
Costs available upon application.

Monthly room and board and incidental expenses:

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants:

Other financial support available for foreign participants:

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest:

Geographical preference: --

UNITED STATES OF AMERICA

A. INSTITUTION

UNIVERSITY OF ALASKA, GEOPHYSICAL INSTITUTE AND PHYSICS DEPARTMENT

Fairbanks, Alaska 99775-0800, United States

Telex: 35414 GFOPH INST FBK Tel.: (907) 474-7282 Cable: --

Contact person: Director, Geophysical Institute

Principal function(s) of institution: Research and education

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: Courses and research pertaining to remote sensing in geology, geologic mapping, radiometric analysis, natural resources, glaciology, sea ice, etc.

Duration/Frequency/Language(s) of instruction: One semester/Annually/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: Depends on course and research work

Facilities: --

Number of trainees: Between 1 and 2

Entry requirements: B.S. in Geology, Geophysics, Physics

Degree/Diploma/Certificate awarded: M.Sc. and Ph.D. degrees

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: $US 1,300 per semester

Monthly room and board and incidental expenses: $US 1,200 per semester

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: Research and teaching assistantship

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: All aspects of remote sensing

Geographical preference: Most aspects of interest deal with high-latitude problems (Arctica and Antarctica)

B. INSTITUTION

UNIVERSITY OF WASHINGTON, DEPARTMENT OF ELECTRICAL ENGINEERING

Seattle, Washington 98195, USA

Tel.: (206) 543-2150 Fax: (206) 543-3842

Contact person: Dr. Thomas A. Seliga, Professor and Chair

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses:

- Electronic and Computers
- Control Systems & Circuits
- Electric Energy
- Electromagnetics, Optics & Acoustics
- Materials and Devices
- Signal Processing & Communications

Research:

Wave propagation and scattering; remote sensing; acoustics; photonics and fiber optics; signal, speech and image processing; computer vision; communications and information theory; automatic control systems;

robotics; electronic materials, devices and sensors; microelectronics processing and fabrication; electronic systems; VLSI design; simulation and testing; computer networks; multiprocessor systems; computer engineering; power and energy system dynamics and control; power electronics; electric drives; artificial neural networks; expert systems.

Duration/Frequency/Language(s) of instruction:
One Quarter Each/Annually/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 50%/--/--/50%

Facilities: Well-equipped laboratories including state-of-the-art computer facilities, anechoic chamber, radar systems, test instrumentation, robotic systems, microelectronics facilities, electro-optic facilities, microsensor laboratory, etc.

Number of trainees: --

Entry requirements: B.Sc. in Electrical Engineering

Degree/Diploma/Certificate awarded: M.Sc. or Ph.D.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Regular University of Washington tuition applies (varies with residency); texts are responsibility of individual, research facilities generally provided.

Monthly room and board and incidental expenses:
Around $1,000

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Approximately 25-50 teaching or research assistantship positions may be available for foreign students.

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest:
Communications, electromagnetics, remote sensing, signal and image processing, control systems and robotics, computers, electronic circuit design, microelectronics, photonics, energy systems.

Geographical preference: None

C. INSTITUTION

CITY UNIVERSITY OF NEW YORK (CUNY), HUNTER COLLEGE, GEOLOGY AND GEOGRAPHY DEPARTMENT

695 Park Avenue, New York, N.Y. 10021, United States

Tel.: (212) 772-5265 Fax: (212) 772-5268

Contact person: Graduate advisor

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Photogrammetry and air photo-interpretation, principles of remote sensing, digital image processing, spatial modelling and geographic information systems
Research: Geometric-optical modelling, information storage and retrieval systems, digital terrain data; economic , physical, regional geography, environmental issues.

Duration/Frequency/Languages) of instruction: 14 weeks/Annually/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: May vary from course to course

Facilities: The Department has access to the CUNY Computing Center IBM mainframe computers via direct link and dial-up lines along with its own minicomputer, SUN Network, ERDAS work stations, large co-ordinate digitizer and assortment of microcomputers with a variety of functions. Computers at all levels are networked together, thus providing great flexibility to the computing environment. The Remote Sensing and Spatial Analysis Laboratory is fully equipped with terminals, plotters and printers; it also has a number of optical remote sensing and surveying instruments. Many software packages are supported, as is a library of image and cartographic data

Number of trainees: Between 1 and 5

Entry requirements: Equivalent to United States B.A. in Geography, related fields, college physics, mathematics, calculus, statistics and TOEFL examination

Degree/Diploma/Certificate awarded: Master degree

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: New York State residents: per credit - $US 112; per excess contact hour $US 37; Maximum per term - $US 1,302; out-of-state residents: per credit - US$ 215, per excess contact hour US$52.00; Maximum for term - $US 2,550; Estimated cost of textbooks: $US 200 per semester

Monthly room and board and incidental expenses: Variable $US 1,500-2,500

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: The Dept. has 2-5 teaching/research assistantships awarded for all applicants

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: All research areas mentioned above

Geographical preference: None

D. INSTITUTION

UNIVERSITY OF ARIZONA, ARIZONA REMOTE SENSING CENTER

Office of Arid Lands Studies, 845 N. Park Ave., Tuscon, Arizona 85719, United States

Telex: 1561507 ARID UT Tel.: (602) 621-7896
Cable: ARIDLANDS Fax: (602) 621-3816

Contact persons:
-Charles F. Hutchinson, Director, Arizona Remote Sensing Center, 845 N. Park, Tuscon, AZ 85719
-Philip N. Slater, Chairman, Remote Sensing Committee, Optical Science Center, University of Arizona, Tuscon, AZ 85721

Principal function(s) of institution: --

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: The Arizona Remote Sensing Center (ARSC) is the central applied remote sensing facility for the University of Arizona. Activities center around research for applications, particularly dealing with agriculture and natural resources management; systems evaluations; resource map production; and training in remote sensing through formal university course instruction and customized management workshops

Duration/Frequency/Language(s) of instruction: Semester/Every semester/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 20%/45%/20%/15%

Facilities: Mainframe, mini- and microcomputer-based image processing and geographic information system hardware; photographic laboratory; aerial video camera and processing system; archive of selected high-altitude and global-coverage photographic LANDSAT imagery

Number of trainees: Between 1 and 30

Entry requirements: Prefer currently-enrolled university-level students or graduates

Degree/Diploma/Certificate awarded: University of Arizona offers a doctoral minor in remote sensing. Certificate of completion of workshop attendees

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Course work $US 3,500 per semester/workshop: $US 500 per person per week

Monthly room and board and incidental expenses: $US 350-500

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Resource mapping/desertification monitoring using integrated satellite and aerial systems to accompany ground sampling methodology; agricultural potential assessment; agricultural yield/yield production; integrations of small image processing facilities to resource management

Geographical preference: Arid/semi-arid lands preferred

E. INSTITUTION

ENVIRONMENTAL RESEARCH INSTITUTE OF MICHIGAN (ERIM)

P.0. Box 134001, Ann Arbor, Michigan 48113-4001, United States

Telex: 4940991 ERIMARB Tel.: (313) 994-1200 Fax: (313) 994-0944
E-Mail: roller @vaxb. erim. org.

Contact person: Norman E.G. Roller

Principal function(s) of institution: Research and development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Training and symposia on remote sensing
Research: Sensors, data processing, data development/analysis, systems development, software development. Artificial intelligence/expert systems, applications. GIS.

Duration/Frequency/Language(s) of instruction: Variable/Contract basis/English, French, Spanish

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: Varies with the client's requirements and needs

Facilities: Sensors, data processing facilities, technical staff, classrooms, field measurement equipment, publications department

Number of trainees: Between 1 and 12

Entry requirements: Basic mathematics and science

Degree/Diploma/Certificate awarded: Certificates of participation

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Variable, depends on scope of training

Monthly room and board and incidental expenses: Variable, depending on trainee's budget and preference

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: FAO, Bilateral, USAID, etc.

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Application projects, training, symposia

Geographical preference: None

F. INSTITUTION

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION (NASA)

Washington, DC 20546

Telex: 89530 NASA Tel.: 202-453-1000 Cable: --

Contact person: Dr. Chester McKee, Director, Associateship and Fellowship Programs, National Research Council (NRC), 2101 Constitution Avenue, Washington, DC 20418

Principal function(s) of institution: Scientific and technical research in the fields of aeronautics and space exploration

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: None
Research: Resident Research Associateships (RRA) as guest investigators in laboratories at seven NASA Research Centers and the Jet Propulsion Laboratory. Advanced basic research is in all areas of space science and technology, with particular topics identified in yearly brochures published by and available from the NRC

Duration/Frequency/Language(s) of instruction: 1 year/Continuous/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 0%/Variable/Variable/Variable

Facilities: Full range of laboratory, field and space equipment

Number of trainees: Approximately 200 U.S. and foreign trainees per year for all areas of aeronautical and space research

Entry requirement: Ph.D. or equivalent

Degree/Diploma/Certificate awarded: None

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: None

Monthly room and board and incidental expenses: Stipend for self support paid to cover all living expenses

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Available through NRC. Number varies, but approximately 80 per year in last few years

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: All areas of space science

Geographical preference: None

G. INSTITUTION

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA), NATIONAL ENVIRONMENTAL SATELLITE, DATA AND INFORMATION SERVICE (NESDIS)

Washington DC 20233

Telex: 7407641 Tel.: 301-763-4586

Contact person: Betty A. Howard, International and Interagency Affairs Office, Code E/IA

Principal function(s) of institution: NESDIS administers an integrated program for the development and use of operational civilian satellite-based environmental remote sensing systems, as well as the acquisition, processing, archiving, analysis, and dissemination of environmental data from satellites and other services.

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:

Training NESDIS provides meteorological satellite and data information training opportunities to scientists and other trained practitioners in the interest of fostering international cooperation in weather data exchanges and in promoting similar programs in developing countries. The training form varies

and is provided according to the availability of NESDIS personnel and resources. Much of its international training activity is conducted in collaboration with the World Meteorological Organization and the National Weather Service. Several regional courses have been conducted, with the objective of training operational meteorologists in basic and advanced techniques of using satellite imagery for forecasting purposes. In addition, NESDIS periodically participates in United Nations and other training programs, with scientists studying at NESDIS facilities and training courses. In cooperation with the U.S. Agency for International Development and the UN/Economic and Social Commission for Asia and the Pacific (ESCAP), NESDIS has conducted training courses on satellite crop monitoring and drought early warning in International Space Year training course in conjunction with the UN Space Applications Programme. This course on remote sensing applications for environmental assessment and monitoring was held at the EROS Data Center in Sioux Falls, South Dakota, during September and October 1991.
Research: The Resident Research Associateships (RRA) Program is administered by the National Research Council and sponsors selected scientists and engineers for tenure as guest investigators in NESDIS laboratories, among others. Research opportunities are offered in NOAA activities as they relate to the oceans, atmosphere, and in some areas, the solid earth, with specific projects identified in yearly brochures published by and available from the NRC

Duration/Frequency/Language(s) of instruction: Varies/Varies/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: Variable

Facilities: Full range of laboratory, field and space equipment

Number of trainees: Training number/courses vary from year to year. The NOAA Resident Research Associateship Program usually accommodates 1-3 fellowships a year at NESDIS, depending on funding availability.

Entry requirement: Training variable; NOAA Resident Research Associateship Program - Ph.D. or equivalent

Degree/Diploma/Certificate awarded: None

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: None

Monthly room and board and incidental expenses: Varies with location

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Available through National Research Council.

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific area of interest: Meteorological satellite and data information training as shown above

Geographical preference: None

H. INSTITUTION

UNITED STATES GEOLOGICAL SURVEY (USGS)

104 National Center, Reston, VA 22092

Telex: 248418 Tel.: 703-648-6064

Contact persons: General Remote Sensing Applications: Chief, Science and Applications Branch, U.S. Geological Survey, EROS Data Center, Sioux Falls, SD 57198; Water Resources: Water Resources Division, U.S. Geological Survey, 436 National Center, Reston, VA 22092; Mineral Resources: Office of International Geology, U.S. Geological Survey, 917 National Center, Reston, VA 22092
Principal function(s) of institution: Earth science research and education

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:

Summary of courses and research activities:

The USGS offers a number of training courses. Specific offerings include:

- The USGS and the University of Hawaii, in cooperation with the United Nations Development Programme, are offering training in marine geology that will be helpful to maritime countries in training personnel in the assessment, exploration and management of their offshore resources.

- The USGS and the University of Hawaii's Center for the Study of Volcanoes are offering training in volcano monitoring.

- The USGS and the University of Idaho, in cooperation with the Foundation for Glacier and Environmental Research, are presenting a training program in Polar and Alpine Geosciences.

- The USGS offers an 8 week course in hydrologic data collection and interpretation to prepare participants to evaluate the water resources of an area or region.

- The National Earthquake Information Center of the USGS is presenting a program on understanding earthquakes and mitigating their effects.

- Postgraduate, on-the-job training opportunities are available through the USGS. International participants work with the USGS hydrologists, geologists, geochemists, geophysicists, and other scientists to learn current technologies to help scientists from overseas become better qualified to assist their countries in establishing or improving their own Earth-science programs.

Duration/Frequency/Language(s) of instruction: 2-10 weeks/Annually/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: varies

Facilities: Numerous photographic laboratories, computers, video displays, optical scanners, film recorders and paper printers/plotters

Number of trainees: Between 8 and 30

Entry requirement: Knowledge of fundamentals of remote sensing and knowledge of the English language

Degree/Diploma/Certificate awarded: Certificate of completion

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: varies

Monthly room and board and incidental expenses: US$ 1,500 - 2,000

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Yes

Other financial support available for foreign participants: Assistance is sometimes available through cooperative programs with the U.S. Agency for International Development

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Wide variety of topics related to Earth science studies

Geographical preference: None

ZIMBABWE

INSTITUTION

NATIONAL REMOTE SENSING FACILITY

P.O. Box 8039, Causeway, Zimbabwe

Telex:-- Tel.: 790701 Cable: --

Contact person: A.B. Made, Box 8039, Causeway, Harare, Zimbabwe

Principal function(s) of institution: Education, research, development, teaching and project execution

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Basic remote sensing courses for agriculture, vegetation and mineral exploration
Research: Crop monitoring, environmental monitoring and mineral exploration using satellite data. Geographic information systems applications

Duration/Frequency/Language(s) of instruction: 2 semesters/Annually/English

Facilities: Mirror stereoscopes, ERDAS digital image processing system, Zoom transferscope (Baush & Lomb), Wild/LEITZ Aviopret, fully equipped photolaboratory, specialized printing press, PROCOM-2 overhead projectors, slide projectors

Number of trainees: 15 - 25

Entry requirements: 1st year University

Degree/Diploma/Certificate awarded: Degrees

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: By State

Monthly room and board and incidental expenses: Provided by State

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: State fellowships are available

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Application of remote sensing to crop monitoring and mineral exploration

Geographical preference: SADCC

UNITED NATIONS ECONOMIC COMMISSION FOR AFRICA (ECA)

A. ETABLISSEMENT

CENTRE REGIONAL DE TELEDETECTION DE OUAGADOUGOU, BURKINA FASO

Place du Centre, OUAGADOUGOU, Burkina Faso

Numéro de téléphone: 30 01 99, 30 06 35, 30 03 96
Adresse: 01 B.P. 1762 - OUAGADOUGOU 01

télex: CRETED 5322 BF

Responsable: Chef de Service Formation

Vocation(s) principale(s) de votre Etablissement: Formation/assistance aux Utilisateurs/Gestion-Diffusion et Promotion des données

1. PROGRAMMES DE CULTURE GENERALE ET SCIENTIFIQUES

Description des cours et activités de recherche:

COURS: Cycle Régulier de Télédétection (CYRETEL), Cycle Post-Universitaire DESS/DEA

I. Bases et méthodes; bases physiques de la Télédétection, Capteurs/Vecteurs, restituion de l'information;

II. Traitement de données; traitements photographiques et numériques, méthodes d'analyses, statistiques, informatique;

III. Applicatons; exposés de méthodes dans divers domaines d'application des sciences de la terre, étude de cas, Travaux Pratiques et Travaux Dirigés de traitement d'image et Systéme d'Information Géographique. (TI/SIG) - Stage terrain.

ACTIVITES RECHERCHE: Divers thémes sont couverts:
Evolution de la réponse spectrale des végétaux, Statistiques agricole, Mobilisation des ressources en eau, pàturages, cartographie de précision, etc...

Durée/Fréquence/Langue(s) d'enseignement: 10 mois/2 fois par an/Anglais, Français

N.B. : Outre le CYRETEL (10 mois), le CRTO organise des stages spécialisés de courte durée (1 á 3 mois) et des stages á la carte.

Répartition du temps alloué en Salle de classe/Laboratoire/Travail sur le terrain/Recherche indépendante: 35%/30%/20%/15%

Moyens dont dispose l'établissement pour exécuter les programmes: Laboratoire photographique; documentations, cartes, images, archives, une unité de traitement et bientôt intégrtion du SIG

Nombre de participants: Entre 10 á 20

Critères régissant l'admission: Pour le CYRETEL (cycle long): Diplome d'Ingénieur/Maitrise; pour les stages courts: Techniciens supérieurs et/ou Technciens selon les stages

Certificats ou diplômes obtenus: Cycle Post-Universitaire : DESS/DEA; Attestation de stage pour les stages de courte durée

2. COUT DES PROGRAMMES

Frais de scolarité, manuels et autres matériaux de recherche: CYRETEL: 1.800.000 FCFA (membres), 2.700.000 (non membres); Stage spécialisés: 1.500.000 FCFA (membres), 2.500.000 (non membres); Stage court: 250.000 á 500.000 FCFA/mois selon le type de stage (membres), 700.000 á 1.000.000 FCFA/mois (non-membres); Stage à la carte (2 á 3 semaines): 250.000 FCFA (membres), á étudier selon les cas (non membres)

Frais mensuels de logement et de subsistance et faux frais: Selon les Institutions de financement de 75.000 á 175.000 francs FCFA/mois

3. POSSIBILITES DE BOURSES D'ETUDES OU DE PERFECTIONNEMENT

Possibilités de bourses d'études ou de perfectionnement pour des participants étrangers: Non

Existence d'autres possibilités d'octroi d'une aide financière pour participants étrangers: Oui. Agences de cooperation multilaterales et/ou bilaterales selon les projects.

4. COLLABORATION AVEC PAYS EN DEVELOPPEMENT: Oui

Domaines qui vous intéressent: Technologie spatiale et ses applications

Préférence géographique: Afrique de l'Est, Asie, Amérique (Brésil/Argentine)

B. INSTITUTION

REGIONAL CENTRE FOR SERVICES IN SURVEYING, MAPPING AND REMOTE SENSING, KENYA

P.O. Box 18118, Nairobi, Kenya

Telex: 25285 KEREGSKE Tel.: 803320 Cable: REGSURVEYS
FAX: 802767

Contact person: Director of Remote Sensing

Principal function(s) of institution: Training, research, development and technical services

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Training: Applications of remote sensing to agriculture, forestry, hydrology, geology and minerals, oceanography, cartography, highway road construction, soils environmental monitoring, natural and man-made disasters, pests; teaching with remote sensing; consultancy services and project design, GIS
Research: Use of geographical information; system of land use in East and Southern Africa; photo-mapping techniques; digital techniques and analysis; food yield prediction techniques

Duration/Frequency/Language(s) of instruction: 3-6 weeks/6 times a year/English; 3-6 weeks/2 times a year/French

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 40%/30%/10%/20%

Facilities: Photo laboratory for colour and B&W imagery processing; continuous processor; digital image processing; servicing and repairing of survey equipment

Number of trainees: Between 15 and 25

Entry requirement: 1st or 2nd degree in natural resources sciences

Degree/Diploma/Certificate awarded: Certificate of attendance. Negotiating for affiliation with ITC and subsequent ITC academic awards: M.Sc., Ph.D.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Approximately US$ 3,500 per participant per course

Monthly room and board and incidental expenses: Included above

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: UN agencies, international donor agencies (e.g. USAID, SIDA, NORAD)

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Natural resources, GIS, aerial photography, geodesy, cartography, digital electronics, remote sensing.

Geographical preference: East and Southern Africa subregion

C. INSTITUTION

REGIONAL CENTRE FOR TRAINING IN AEROSPACE SURVEYS (RECTAS)

O.A.U. Campus, ILE-IFE, Nigeria

Telex: 34262 RECTAS NG Tel.: 036-230-225, 036-320-050

Contact person: Director

Principal function(s) of institution: Training, research and consultancy

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Training: (i) Technicians Course (9-12 months) in Image Interpretations; (ii) Technologist Course (12 months) in Image Processing (digital and analogue images); (iii) Postgraduate course (12 months) in Remote Sensing Applications. Research: Remote sensing application to natural resources surveys, and environmental monitoring; space maps; applications in Photogrammetry; Methodology in Remote Sensing Education.

Duration/Frequency/Language(s) of instruction: --/--/
English, French

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --

Facilities: Micro computers for image and word processing; print-out peripherals; Digital Images in CCTs; Analog interpretation equipment; mirror and pocket stereoscopes, optical transfer devices such as zoom, stereosketch, stereopret, optical sketchmaster, etc.; photographic processing laboratory; photogrammetric equipment; library and documentation; GIS system (APY System for map revision); Near future availability of ARC INFO and ILWIS.

Number of trainees: Technicians: 10 per year; Technologists: 10 per year; Postgraduates: 10 per year.

Entry requirement: --

Degree/Diploma/Certificate awarded: Technician's Certificate/Diploma; Technologists Diploma; Postgraduate Diploma; Workshop Certificate of Attendance.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Costs of tuition, text and related materials to be obtained by writing to the Director of Centre

Monthly room and board and incidental expenses: As per stipulation by the Obafemi Awolowo University, other accredited hotels in town and RECTAS hostel.

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Yes, for nationals of Member States of RECTAS and ECA

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: (i) As indicated in the summary above; (ii) Professional and Technical training in Remote Sensing.

Geographical preference: (i) Member States of RECTAS (At the moment 8 West/Central African States); (ii) Member States of Economic Commission for Africa

ASIAN INSTITUTE OF TECHNOLOGY

NATURAL RESOURCES PROGRAMME

P.O. Box 2754, Bangkok 10501, Thailand

Telex: 84276 TH Tel.: 66-2-524-5577
Fax: 66-2-524-5597

Contact person: Co-ordinator

Principal function(s) of institution: Training and education

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses:

(a) 13 week training course: basic electromagnetic theory, visual and digital airphoto and satellite data interpretation, field work for verification of maps produced using remote sensing data. Team projects focus on use of remote sensing for mapping natural and cultural resources in rural areas of the region.

(b) 13 week training course: geographic data: spatial and thematic characteristics, structures, and processing; data bases: information sources, integrity and accuracy; construction of landscape models; current GIS descriptions and evaluation. Team projects focus on uses of GIS for development and management of natural resources in the region.

(c) 13-week training course in Environmental Planning: communications & team planning, project planning & management, photo-interpretation, terrain analysis, GIS basics, bio-physical suitability analysis, socio-economic suitability analysis, and EIA basics. Team projects use the "Project CaseWork" approach to focus on comprehensive action plan for development within the region.

(d) Workshop in remote sensing image processing using micro-computers: stresses practical (laboratory) work

(e) Workshop in GIS using micro-computers: stresses practical (laboratory) work

Research: Integration of systems dynamics modelling with GIS static spatial models for spatial analysis of statistical output from dynamic simulations

Duration/Frequency/Language(s) of instruction:
Certificate: 3-1/2 months/one per year/English
Workshops: 3 weeks/1 per year/English (for remote sensing and GIS each)

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research:
Certificate: 25%/37%/8%/30% (team project - remote sensing)
43%/16%/8%/32% (team project - GIS)
Workshop: 50%/50%

Facilities: The following workstations have a wide array of input-output devices (including tape and disk drives, digitizing tables, printers and ink-jet plotters, and a stand-alone Optronics scanner-plotter system):

Software	No. of Workstations and Graphics Controllers	CPU Host Computer
DIMAPS/MAP (IPS)	(2) Ramtek 512x512	IBM 3083 Mainframe
MicroVips (IPS)	(1) Numelec Pericolour 2001 512x512 (1) Geode 1024x1024	DEC MicroVax II Mini
ERDAS and Multiscope (IPS) and GIS	(2) Revolution No. 9 512x512	NEC APC-IV Powermate I (80287) Micro

The Optronics Colorwrite is the primary output device for research products from these systems. Up to 30"x40" colour or black and white enlargements can be printed from Optronics masters, using Wing-Lynch film processing and Kreonite print processing equipment. In addition, PAMAP (GIS), ARC/INFO(GIS), IDRISI(GIS) and DRAGON (IPS), plus GIS and IPS tutorial systems developed at AIT are installed on the eight NEC APC-IV Powermate I (80287 math coprocessor) workstations in the INRDM/RSL microcomputer classroom. The workstations use VGA graphics cards with NEC Multisync RGB monitors

Number of trainees: Between 10 and 30 in each Certificate Course or Workshop (for remote sensing and GIS)

Entry requirements: Undergraduate degree or diploma

Degree/Diploma/Certificate awarded: Certificate of Attendance (3-1/2 month programme and workshop)

2. COST OF PROGRAMMES

Cost of tuition, texts, field work and related research material:
(a) Certificate programme: $US 3,600
(b) Workshop: $US 2,000

Monthly room, board and incidental expenses:
(a) Certificate programme: $US 383 ($US 1,530 per programme)
(b) Workshop: N.A. (included in tuition)

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for participants: Up to 6 per year for remote sensing and GIS courses; 20 per year for Environmental Planning course. More for workshop.

Other financial support available for participants: Some travel scholarships may also be available

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Remote sensing, geographic information systems, digital cartography, and DEM

Geographical preference: Asia and the Pacific

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS (FAO)

REMOTE SENSING CENTRE (AGRT)

Via delle Termi di Caracalla, 00100 Rome, Italy

Telex: 610181 FAO I
Tel.: 57975583
Cable: FOODAGRI ROME
Fax: 57826101, 57973152

Contact person: Chief, Remote Sensing Centre

Principal function(s) of institution: Remote sensing technology transfer; Environmental monitoring by satellites; Agricultural, forestry and fisheries applications of remote sensing; Remote sensing inputs to global (FAO), regional and national early warning systems on food security; Technical backstopping of remote sensing components of FAO executed field projects; Information and advisory services on remote sensing applications to development and management of renewable natural resources.

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Short courses: (2-4 weeks duration) on remote sensing applications at inter-regional, regional/sub-regional and national level in co-operation with UN(OOSA), WMO, UNDRO, UNESCO, UNEP, ESCAP, ECA, WHO, ESA, Member States (e.g. Italy, Federal Republic of Germany, France) and Regional Remote Sensing Centres; workshop for decision makers (1 week duration) to provide appraisal of the state-of-the-art of remote sensing inputs to development and management of renewable natural resources, including briefings on appropriate institutional infrastructures, projects development, cost/benefit analysis, educational and training opportunities
Specialized on-the-job training: Analog and digital image analysis techniques; land-use mapping based on remote sensing data; environmental monitoring by satellite.
Development and testing of appropriate remote sensing techniques for application in developing countries (pilot action studies)

Duration/Frequency/Language(s) of instruction: 2-4 weeks/4-5 courses per year/English, French, Spanish,
1 week/1-2 workshops for decision makers per year/English, French

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 40%/40%/20%/--

Facilities: Comprehensive range of equipment for analog and digital analysis of remote sensing data, reproduction of imagery and thematic mapping; complete training facilities for 24 participants

Number of trainees: Between 15 and 24

Entry requirements: University degree in relevant discipline, present work responsibilities relevant to the theme of the training course. In case of workshops for decision makers, the only entry requirement is a senior government position with responsibilities including renewable natural resources.

Degree/Diploma/Certificate awarded: Attendance certificate

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Free (no stipend paid)

Monthly room and board and incidental expenses: Provided unless in host country

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Several a year. FAO provides fellowships under its executed field projects in developing countries

Other financial support available for foreign participants: Return travel covered for selected participants

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific area of interest: Since 1972, the FAO Remote Sensing Centre has been assisting developing countries in establishing or strengthening their remote sensing institutional infrastructures and in developing indigenous capacities for operational applications of remote sensing in agriculture, forestry and fisheries sectors.

Geographical preference: Developing countries with priorities assigned according to their needs

UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANIZATION(UNESCO)

UNESCO

7, Place de Fontenoy, 75700 Paris, France

Telex: 204461 PARIS Tel.: (33.1) 4568 1000
Cable: UNESCO PARIS Fax: (33)(1)46031122

Contact person: Robert Missotten, Division of Earth Sciences

Principal function(s) of institution: --

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: The following post-graduate training courses sponsored by UNESCO and dealing with the application of remote sensing to integrated natural resources research, management and development will continue for the next few years:

(i) Post-graduate courses in integrated study and rational use of natural resources at the universities of Paris, Montpellier and Toulouse, France;

(ii) International post-graduate training courses on remote sensing applications, digital image processing and aerospace surveys for applied geomorphology and engineering geology at the International Institute for Aerial Survey and Earth Sciences (ITC), Enschede, The Netherlands;

(iii) International post-graduate training course on photo-interpretation applied to civil engineering and geology at the Intituto Geografica Agusten Codazzi (IGAC), Bogota, Colombia;

In cooperation with FAO, UNESCO organizes post-graduate training on the use of remote sensing images in water resources studies.

The Marine Sciences Training and Education Programme (TREDMAR) will make available its third computer-based learning module "Application of Marine Image Data" by the end of 1991 and its fourth module "Some Marine Applications of Satellite and Airborne Remote Sensing" by 1992. The objective is to help strengthen international satellite oceanography training and education by setting up a network of lesson users and producers.

The Intergovernmental Oceanographic Commission (IOC) of UNESCO will continue to organize in 1992 and beyond, regional training courses on the application of satellite remote sensing to marine studies, making use of the aforementioned computer-based learning modules.

Apart from these regular courses, financial contributions are made by UNESCO for holding ad hoc training courses and workshops as follows:

a) Workshops are held yearly in the framework of the UNESCO/International Union of Geological Sciences (IUGS) programme "Geological Applications of Remote Sensing" (GARS) in Latin America, which focuses on the use of remote sensing and GIS for monitoring hazard mapping in the Andean region, in cooperation with INGEOMINAS, Bogota, Colombia.

b) Ad hoc training courses and workshops will be held in the framework of the UNESCO/ITC programme "Geoinformation for environmentally sound management of natural resources", on the use of remote sensing and GIS in the study of ecology, hydrological and geological resources from 1992 and beyond, in China, Indonesia and Kenya.

c) For the third phase of the"GARS" project in Africa for the creation of a remote sensing user network in Burundi, Tanzania, Uganda and Zambia, workshops will be held in 1992, in cooperation with the Royal Museum of Central Africa (MRAC). This will continue in the next 5 years.

Research:

a) In the framework of the UNESCO/International Union of Geological Sciences (IUGS) programme "Geological Applications of Remote Sensing" (GARS), two research projects are being implemented in Africa and in Latin America. The first focuses on the comparative use of remote sensing data from different sensors in the geological mapping of the Kibaran terranes in East and Central Africa, whereas the second consists of evaluating the use of airborne and spaceborne remote sensing data for monitoring of landslides in the Andean region.

b) An Intergovernmental Oceanographic Commission (IOC)/World Meteorological Organisation (WMO) ad hoc Group on Ocean Satellites and Remote Sensing has been established to analyze the requirements of marine meteorology and operational physical oceanography for remote sensing data, related to (i) polar-orbiting earth observation satellites; (ii) geostationary satellites; (iii) ground-based HF and radar systems; (iv) data access to the systems.

c) The IOC/WMO Committee for Integrated Global Ocean Services Systems (IGOSS) is presently studying the operational exchange of remotely sensed oceanographic data as part of the IGOSS data processing and services system.

d) Archiving and the exchange of non-operational remotely sensed oceanographic data are being studied by the IOC Commission on International Oceanographic Data and Information Exchange (IODE). At the same time, they are trying to find an answer to such problems as the absence of standard format for oceanographic satellite data products, the lack of compatibility between the satellite data products from different centres, etc.

e) Within the framework of the IOC Global Investigation of Pollution in the Marine Environment (GIPME), the possibility of using remotely sensed data to monitor marine pollution, i.e. applications of remote sensing in coastal zone and shelf seas dynamic, is being studied.

f) UNESCO assists in UNEP's Earthwatch activity, and the Swiss Federal Institute of Technology in a World Glacier Inventory. Reports have been published in 1991 and will continue to 1993 and beyond.

Duration/Frequency/Language(s) of instruction: The UNESCO National Commissions are provided annually with detailed information on the above-mentioned courses

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: Same information as above.

Facilities: Assistance to facilitate the exchange of scientists and information, and limited assistance for the development of the scientific infrastructure

Number of trainees: Number varies, but usually not more than 25

Entry requirement: In general, BSc in geology, hydrology or marine sciences is required, unless other requirements are given in the information/application sheets.

Degree/Diploma/Certificate awarded: Certificates are issued upon successful completion of the short courses. Diplomas are awarded at the end of the long-term programmes

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Normally, tuition fees or textbook costs are borne by UNESCO or cooperating host organization.

Monthly room and board and incidental expenses: Vary according to the programme. More details can be obtained from cooperating institutes via the UNESCO National Commissions.

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Fellowships are available for training programmes enumerated above.

Other financial support available for foreign participants: Further information may be found in the course information notes available at UNESCO National Commissions.

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: The above activities are oriented towards strengthening the use of remote sensing in developing countries.

EUROPEAN SPACE AGENCY (ESA)

ESA

8-10, rue Mario-Nikis, 75738 Paris Cedex 15, France

Telex: ESA 202746 Tel.: (33.1) 4 273. 7459
Cable: SPACEUROP PARIS

Contact person: Head of International Affairs Branch

Principal function(s) of institution: Research and development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: ESA has been a co-sponsor of international training courses in remote sensing with the UN, WMO, FAO, UNDRO, RRSF, ASECNA; Asia: AIT, Asian Development Bank, ESCAP; Africa: CRTO, RCCRS, African Development Bank; Latin America: INPE, CNAE, CLIRSEN, Augustin Codazzi
Research: Different areas in Earth observation, including space meteorology.

Duration/Frequency/Language(s) of instruction: 2-3 weeks/--/English, French, Spanish

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: Fully dependent on the topic

Facilities: Broad range of facilities is available

Number of trainees: 20-25 participants for each training course

Entry requirement: Experienced scientists, engineers, technicians

Degree/Diploma/Certificate awarded: Certificate of attendance

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: None

Monthly room and board and incidental expenses: None

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: 2 per year; one fellowship in remote sensing and one in space meteorology offered under the auspices of the United Nations Space Applications Programme

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Earth observation

Geographical preference: None

III

SATELLITE COMMUNICATIONS

ARGENTINA

INSTITUCION

COMISION NACIONAL DE ACTIVIDADES ESPACIALES

Av. Dorrego 4010/18 (1425), Buenos Aires, Argentina

Fax: 541-774-5703 Teléfono: 774-9310 , 771-5810

Persona a contactar: Dr. Jorge Sahade

Funciones principales de la institución: Asesoramiento al P.E.N. en materia espacial-Coordinación de la actividad espacial en la Argentina - Asesor técnico de la Secretaría de Estado de Comunicaciones para la implantacion del Satélite Doméstico de Comunicaciones Argentina

1. PROGRAMAS ACADEMICOS Y CIENTIFICOS

Lista de cursos y actividades de investigación:
Cursos: --
Investigación: Proyecto de implementación de un sistema de comunicaciones por satélite (DOMSAT)

Duración/Frecuencia/Idioma(s) de ensenanza: --/--/--

Distribución del tiempo en Trabajo en clase/Laboratorio/Trabajo en el terreno/Investigaciones independientes: --/--/--/--

Tipo de servicios o instalaciones: Laboratorios, instrumental, computadoras, etc.

Número de participantes: Entre 1 y 2

Calificaciones académicas (minimas) requeridas: Grado de disciplinas afines a la especialided

Certificados o diplomas extendidos por la institución: Certificados

2. COSTO DE LOS PROGRAMAS

Costo de los cursos, de los libros de texto y de los materiales de investigación afines: --

Gastos mensuales de alojamiento y manutención y gastos menudos: --

3. DISPONIBILIDAD DE ESTUDIO/BECAS

Disponibilidad de estudio/becas para participantes extranjeros: Variable segun el caso

Otra posibilidades de ayuda financiera para participantes extranjeros: Alojamento con tarifas preferenciales en el Centro Espacial San Miguel

4. COLABORACION CON LOS PAISES EN DESARROLLO: Sí

Esfera de interés: Formación de recursos humanos, intercambio de tecnologias espaciales, asesoramiento, diseno de proyectos

Region geográfica determinada: Con todas las regiones

AUSTRALIA

A. INSTITUTION

ROYAL MELBOURNE INSTITUTE OF TECHNOLOGY

124 La Trobe St., P.0. Box 2476, Melbourne, Victoria, 3001, Australia

Telex: AA36406 Tel.: (03)662-0611,(03)663-5611
Cable: MELTECH Melbourne

Contact person: Mr. G.H.V. Thomson, School of Electrotechnology; Mr. Q. Manh, Department of Communication and Electrical Engineering

Principal function(s) of institution: Education and applied research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: Applied Science Faculty: Satellite positioning via the Global Positioning System; undergraduate teaching of applied science in surveying; research and experimental activities related to the Global Positioning System
Engineering Faculty: Continuing education for practising engineers.
Technical College: Technician course in satellite ground station maintenance

Duration/Frequency/Language(s) of instruction: One semester/Annually/ English; Engineering Faculty: 2,5 weeks/Annually/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: Applied Science Faculty (60%/20%/--/20%), Engineering Faculty (45%/30%/--/25%), Technical College (50%/40%/10%/--)

Facilities: Applied Science Faculty (Global Positioning Receiver in 1986); Engineering Faculty (Satellite receiving earth station, communication laboratory); Technical College (Communication equipment, data communication, multiplexing/computer data equipment)

Number of trainees: Applied Science Faculty (between 1 and 2), Engineering Faculty (16), Technical College (between 10 and 16)

Entry requirements: Applied Science Faculty (Univ. entrance exam.),Engineering Faculty (Bachelor of Engineering in Electrical, Electronic or Communications Engineering), Technical College (Electronic tradesman qualification)

Degree/Diploma/Certificate awarded: Applied Science Faculty (part of Bachelor of Appl. Science and Master of Appl. Science), Engineering Faculty (Certificate of Course Attendance), Technical College (Electronic Technician)

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Engineering Faculty: $A 16,000 per course with 16 participants maximum

Monthly room and board and incidental expenses: $A 700

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Satellite positioning and communications technology

Geographical preference: South-East Asia, Papua New Guinea; None for Engineering Faculty

B. INSTITUTION

CANBERRA COLLEGE OF ADVANCED EDUCATION

P.0. Box 1, Belconnen, A.C.T. 2616, Australia

Telex: 62267 Tel.: 062 522111 Cable: COLLADVED

Contact person: --

Principal function(s) of institution: Education

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: Undergraduate studies in physics, electronics and communications engineering

Duration/Frequency/Language(s) of instruction: Semester/annually/ English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent research: 2 hrs a week/3hrs a week/--/7 hrs a week

Facilities: Satellite earth station

Number of trainees: Between 5 and 15

Entry requirements: Normal college entry requirements for degree course

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: College fees

Monthly room and board and incidental expenses: College fees if resident on campus

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Satellite communications technology

Geographical preference: Pacific Basin preferred, but not exclusively

AUSTRIA

INSTITUTION

INSTITUT FUR NACHRICHTENTECHNIK UND WELLENAUSBREITUNG

Inffeldgasse 12, A-8010 Graz, Austria

Telex: 31221 Tel.: 3167061/7441 Cable: –

Contact person: Prof. W. Riedler

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Selected topics on communication satellite systems, microwaves
Research: Wave propagation at frequencies above 10 GHz, analog and digital data transmission experiments

Duration/Frequency/Language(s) of instruction: --/--/--/--

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 30%/10%/10%/50%

Facilities: Satellite earth station, communication test laboratory

Number of trainees: Between 1 and 2

Entry requirements: Bachelor's degree, but Master's degree preferred

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: –

Monthly room and board and incidental expenses: $A 5,000 approx.

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: 2 per year; fellowship offered under the auspices of the United Nations Programme on Space Applications

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Satellite communications

Geographical preference: None

BELGIQUE

A. ETABLISSEMENT

UNIVERSITE LIBRE DE BRUXELLES

Avenue F.D. Roosevelt, 50, B-1050 Bruxelles, Belgique

Numéro de télex: 23069	Adresse télégraphique: UNILIB Téléphone: 33-2-6503141

Responsable: Mr. P. van Binst

Vocation(s) principale(s) de votre établissement: Enseignement, recherche, développement

1. PROGRAMMES DE CULTURE GENERALE ET SCIENTIFIQUES

Description des cours et activités de recherche:
Cours: --
Activités de recherche: Transmission de données

Durée/Fréquence/Langue(s) d'enseignement: --/--/--

Répartition du temps alloué en Salle de classe/Laboratoire/Travail sur le terrain/Recherche indépendante: --/--/--/--

Moyens dont dispose l'établissement pour exécuter les programmes: Crédits du Ministère de l'éducation nationale

Nombre de participants: Entre 1 et 2

Critères régissant l'admission: Diplôme de 2ème cycle

Certificats ou diplômes obtenus: --

2. COUT DES PROGRAMMES

Frais de scolarité, manuels et autres matériaux de recherche: --

Frais mensuels de logement et de subsistance et faux frais: --

3. POSSIBILITES DE BOURSES D'ETUDES OU DE PERFECTIONNEMENT

Possibilités de bourses d'études ou de perfectionnement pour des participants étrangers: Néant

Existence d'autres possibilités d'octroi d'une aide financière pour participants étrangers: Bourses et stages ASE, etc.

4. COLLABORATION AVEC PAYS EN DEVELOPPEMENT: Oui

Domaines qui vous intéressent: Transmission de données

Préférence géographique: Aucune

B. ETABLISSEMENT

UNIVERSITE CATHOLIQUE DE LOUVAIN

Place de l'Université, 1, B-1348 Louvain-la Neuve, Belgique

Telex: 59315 TELHY Téléphone: 010/472300
Fax: 010/452272

Responsable: Prof. A. Vander Vorst, Labo Hyperfrequency,
Place du Levant, 3, 1348 Louvain-la Neuve, Belgique

Vocation(s) principale(s) de votre établissement: Enseignement, recherche développement

1. PROGRAMMES DE CULTURE GENERALE ET SCIENTIFIQUES

Description des cours et activités de recherche: Télécommunications, propagation, hyperfréquences, systèmes de communications, séminaire de télécommunications et d'hyperfréquences

Durée/Fréquence/Langue(s) d'enseignement: Depend des sujets traités et des préalables acquis par l'étudiant/--/français

Répartition du temps alloué en Salle declasse/Laboratoire/Travail sur le terrain/Recherche indépendante: La répartition exacte dépend des sujets. En général, on peut dire que le travail se répartit environ en trois tiers égaux entre le travail théorique en classe, le travail expérimental et le travail indépendant

Moyens dont dispose l'établissement pour exécuter lesprogrammes: L'Université dispose d'une équipe de recherche expérimentée et de moyens expérimentaux adéquats

Nombre de participants: Entre 10 et 20

Critères régissant l'admission: Le niveau dépend des cours choisis. Les critères ne peuvent donc pas être définis en général

Certificats ou diplômes obtenus: Les diplômes peuvent être, le cas échéant: Ingenieur civil electricier. Ingenieur civil en télécommunications. Certificat de spécialisation. Licence en sciences appliquées. Maitrise. Doctorat

2. COUT DES PROGRAMMES

Frais de scolarité, manuels et autres matériaux de recherche: On peut considérer que le coût global d'une année d'études s'élève à environ FB 175.000 par an pour un célibataire. Ce montant comprend le droit d'inscription: FB 20.000 et le logement: environ FB 6.000 par mois

Frais mensuels de logement et de subsistance et faux frais: --

3. POSSIBILITES DE BOURSES D'ETUDES OU DE PERFECTIONNEMENT

Possibilités de bourses d'études ou de perfectionnement pour des participants étrangers: L'UCL octroie chaque année quelque 20 bourses à des ressortissants du tier-monde qui entament des études de postgraduat. Le montant mensuel de la bourse s'élève à FB 19.500 pour un célibataire. Le Centre social universitaire dispense dans certains cas une aide financière en cours d'année

Existence d'autres possibilités d'octroi d'une aide financière pour participants étrangers: Des bourses peuvent également être obtenues auprès de l'Administration générale de la coopération au développement à Bruxelles ainsi qu'auprès du Commissariat général aux relations internationales, également situé à Bruxelles, via le poste diplomatique belge à l'étranger. Enfin, des bourses sont disponibles auprès d'organismes internationaux tels que l'UNESCO, la CEE, etc. Les conditions et les montants de ces bourses, variables selon les organismes, peuvent être obtenus auprès de ceux-ci

4. COLLABORATION AVEC PAYS EN DEVELOPPEMENT: Oui

Domaines qui vous intéressent: Télécommunications spatiales en général, exploitation de stations terrestres, et radiometres.

Préférence géographique: En télécommunications spatiales nous avons été fréquemment sollicités par l'Amérique latine, l'Afrique francophone et l'Inde

B R A Z I L

A. INSTITUTION

INSTITUTO TECNOLOGICO DE AERONAUTICA

Centro Tecnico Aeroespacial, 12225-Sao José dos Campos, S.P., Brazil

Telex: 1233393 CTAE BR Tel.: 0123-41-2211, Ex. 112
Fax: (0123) 22-9195

Contact person: Dr. Fernando Walter

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: Postgraduate courses in different aspects of satellite communications, navigation and surveillance by satellite.

Duration/Frequency/Language(s) of instruction: 2-4 years/every semester/ Portuguese

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 50%/--/--/50%

Facilities: Library, computer and laboratories facilities

Number of trainees: Up to 15

Entry requirements: B.Sc. degree - electronic and aeronautic engineering

Degree/Diploma/Certificate awarded: Master and Ph.D degree

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Not defined

Monthly room and board and incidental expenses: $US 300

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: Eventual support from specific agencies, such as CNPq, FAPESP, CAPES, UNDP, ICAO

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Satellite communications, navigation and surveillance

Geographical preference: Southern hemisphere

B. INSTITUION

INSTITUTO DE PESQUISAS ESPACIAIS (INPE)

Caixa Postal 515, 12200 Sao José dos Campos, SP, Brazil

Telex: (011) 33530 Tel.: (0123) 22.9977

Contact person: Mr. Aydano Barreto Carleial

Principal function(s) of institution: Research and development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: --
Research: On-board telecommunication subsystems (telecommand reception, telemetry transmission, repeating of signals); ground segment telecommunications (main and back-up stations for tracking, telemetry and command operations of satellites; data collection platforms; communications network)

Duration/Frequency/Language(s) of instruction: --/--/--

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --/--/--/--

Facilities: Laboratories, field work facilities when needed

Number of trainees: --

Entry requirements: --

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: About $US 250

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: Organization of American States and international organizations

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Satellite communications

Geographical preference: None

CHILE

INSTITUTION

UNIVERSIDAD DE CHILE, CENTRO DE ESTUDIOS ESPACIALES

Arturo Prat 1171, Of. 119, Santiago, Chile

Telex: 240523 CENET CL Tel.: 56-2-721816
Fax: 56-2-8441003

Contact person: Martin Arluciaga

Principal function(s) of institution: Satellite Tracking Station and Satellite Data Applications

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: --
Research: Research in acquisition and processing of satellite data (receiving stations, antennas, processing systems)

Duration/Frequency/Language(s) of instruction: --

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --

Facilities: Electronic and mechanical laboratories for design and building of receiving stations

Number of trainees: --

Entry requirements: Engineers

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Above areas

Geographical preference: South America

COLOMBIA

INSTITUCION

EMPRESA NACIONAL DE TELECOMUNICACIONES (TELECOM)

Calle 23, No. 13-49, Piso 13, Bogotá, D.E., Colombia

Telex: 44280 Teléfono: 2420660

Persona a contactar: Victoria Kairuz Marquez, Transversal 49, No. 105-84, Bogotá, Colombia

Funciones principales de la institución: Prestar servicios de telecomunicaciones nacionalese internacionales

1. PROGRAMAS ACADEMICOS Y CIENTIFICOS

Lista de cursos y actividades de investigación:
Cursos: Cursos con el fin de analizar el comportamiento general de enlaces satelitales y estaciones terrenas para la correcta operación y mantenimiento de estas últimas

Actividades de investigación: --

Duración/Frecuencia/Idioma(s) de enseñanza: 105 horas/semestral/español

Distribución del tiempo en Trabajo en clase/Laboratorio/Trabajo en el terreno/Investigaciones independientes: 60%/--/30%/10%

Tipo de servicios o instalaciones: Telecom cuenta con la División de Capacitación ITEC

Número de participantes: Entre 10 y 20

Calificaciones académicas (mínimas) requeridas: Conocimientos básicos

Certificados o diplomas extendidos por la institución: Certificados

2. COSTO DE LOS PROGRAMAS

Costo de los cursos, de los libros de texto y de los materiales de investigación afines: --

Gastos mensuales de alojamiento y manutención y gastos menudos: --

3. DISPONIBILIDAD DE BECAS

Disponibilidad de becas para participantes extranjeros: No

Otra posibilidades de ayuda financiera para participantes extranjeros: El curso para estranjeros es gratuito

4. COLABORACION CON LOS PAISES EN DESARROLLO: Sí

Esfera de interés: Comunicaciones por satélite

Region geográfica determinada: Actualmente se adelanta el proyecto denominado CONDOR, con el cual los paises del Pacto Andino compartirán un satélite propio

FINLAND

A. INSTITUTION

HELSINKI UNIVERSITY OF TECHNOLOGY, RADIO LABORATORY

Otakaari 5A, SF-02150 Espoo, Finland

Telex: 123889 hutel st Tel.: 358-0-4512241

Contact person: Dr. Antti Räisänen

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Propagation of radio waves: propagation in atmosphere and near space, scattering in various surfaces and obstacles
Research:Propagation from satellite to Earth at millimeterwaves; measurement of attenuation due to atmosphere, rain, etc.

Duration/Frequency/Language(s) of instruction: semester/Annually/Finnish

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 100%/--/--/--

Facilities: Radio research station, receivers

Number of trainees: No specific limits

Entry requirements: B.Sc. degree

Degree/Diploma/Certificate awarded: Diploma Engineer (M.Sc. equivalent); Licensiate of Technology; Doctor of Technology (requires 1-5 year thesis work)

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Textbooks only

Monthly room and board and incidental expenses: Fmk 1,500 or more

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: --

Geographical preference: None

B. INSTITUTION

HELSINKI UNIVERSITY OF TECHNOLOGY, LABORATORY OF SPACE TECHNOLOGY

Otakaari 5A, SF-02150 Espoo, Finland

Telex: 123889 Tel.: 358-0-4512371

Contact person: Mr. Martti Hallikainen

Principal function(s) of institution: Education and Research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Satellite Communications
Research:

Duration/Frequency/Language(s) of instruction:
Semester/Every second year/Finish (English if necessary).

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 50/25/25/Optional

Facilities: --

Number of trainees: Up to 10

Entry requirements: B.Sc.

Degree/Diploma/Certificate awarded: M.Sc. Programme in Space Technology, Ph.D Programme in Space Technology.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material:
Nominal text, etc. fees

Monthly room and board and incidental expenses:
Approximately FIM 2,500 (in dormitory)

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: --

Geographical preference: None

C. INSTITUTION

TAMPERE UNIVERSITY OF TECHNOLOGY

P.O.B. 527, 33101 Tampere, Finland

Telex: 22313-TTUTR-SF Tel.: 358-31-162111

Contact person: Leo Sintonen

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Research: Satellite computer communications.
This research activity is at the beginning. No courses on that topic are available

Duration/Frequency/Language(s) of instruction: --/--/--

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --/--/--/--

Facilities: The research is mainly theoretical

Number of trainees: --

Entry requirements: M.Sc. degree

Degree/Diploma/Certificate awarded: None

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Satellite computer communications

Geographical preference: None

D. INSTITUTION

TECHNICAL RESEARCH CENTRE OF FINLAND (VTT)

Box 100, SF-02151 Espoo, Finland

Telex: 122972 VTTHA SF Tel.: 358-0-4561
Fax: 358-0-456-7020

Contact person: J. Aurinsalo

Principal function(s) of institution: Technical Research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Antennas, Receivers, Terminals, Testing
Research: Land mobile terminals, antennas; in-orbit test systems.

Duration/Frequency/Language(s) of instruction: --

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --

Facilities: Unechoic Chambers, test equipment

Number of trainees: Up to 2

Entry requirements: Under graduate students

Degree/Diploma/Certificate awarded: None

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material:

Monthly room and board and incidental expenses:

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: Salary can be paid for the Exchange Researchers

4. COLLABORATION WITH DEVELOPING COUNTRIES: None

Specific areas of interest:

Geographical preference: --

GERMANY

INSTUTITION

DEUTSCHE FORSCHUNGSANSTALT FUR LUFT- UND RAUMFAHRT e.V. (DLR) (German Aerospace Research Establishment)

P.0. Box 906058, 5000 Köln 90, Federal Republic of Germany

Telex: 8810-0 dlrd Tel.: 49-0-2203-6010
Fax: 02203-67310

Contact person: Prof. Dr. Walter Kröll, Chairman

Principal function(s) of institution: Aeronautical and space research and development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: --
Research: Communication and navigation using space systems and technology

Duration/Frequency/Language(s) of instruction: --/--/--

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: Not separately identified

Facilities: Laboratories, simulation and field testing facilities

Number of trainees: Depends on number and scope of joint projects

Entry requirements: M.Sc. or Ph.D.

Degree/Diploma/Certificate awarded: None

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: N/A

Monthly room and board and incidental expenses: N/A

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: On a case-by-case basis, financial assistance for living expenses may be available

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Any area where a foreign partner will make a substantial (not necessarily financial) contribution to a joint project of common interest

Geographical preference: --

GHANA

INSTITUTION

POSTS AND TELECOMMUNICATIONS TRAINING SCHOOL

Posts and Telecommunications Corporation

Accra-North, Ghana

Telex: 2752 PTTS. GH. Tel.: 226766/221412

Contact person:

Principal function(s) of institution: Training

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Satellite Equipment, Ground Stations Equipment

Duration/Frequency/Language(s) of instruction:
2+2 years/yearly/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 35%/35%/25%

Facilities: Training satellite earth station under construction, other equipment to be provided.

Number of trainees: Between 6 and 10.

Entry requirements: B.Sc. or Part II C. & G.

Degree/Diploma/Certificate awarded:

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material:

Monthly room and board and incidental expenses:

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Equipment sharing, exchange of lecturers

Geographical preference: Yes. Proximity essentual

GREECE

A. INSTITUTION

OTE TELECOMMUNICATION TRAINING CENTRE

23, Davaki Street, GR 176-72 Kallithea, Athens, Greece

Telex: 216621 DOPE GR Tel.: 9587299 Cable: OTE

Contact person: Mr. K. Kalitsis

Principal function(s) of institution: Training

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: Training and specialized courses for engineers and technicians on various subjects of satellite communications such as operation and maintenance techniques of earth stations, INMARSAT installations, etc.

Duration/Frequency/Language(s) of instruction: Variable/Occasionally/Greek

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 42%/--/58%/--

Facilities: Classroom audiovisual facilities, earth station

Number of trainees: Up to 25

Entry requirements: Higher level, mainly in electronics

Degree/Diploma/Certificate awarded: None

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Varies depending on course

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: About 10 fellowships are available

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: None

Specific areas of interest: N/A

Geographical preference: N/A

B. INSTITUTION

EUGENIDES FOUNDATION, SPACE RESEARCH DEPARTMENT

387 Syngrou Ave., 175 64 Athens, Greece

Fax: 9417372 Tel.: 9411181
Cable: FONDATIONEVGE

Contact person: Prof. M. Moutsoulas

Principal function(s) of institution: Education and Research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
General study of space applications, satellite communications, navigation and remote sensing.

Duration/Frequency/Language(s) of instruction:
1 week/6 per year/Greek

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 80%/-/-/20%

Facilities: Graphics system Amiga 2000 with several peripherals, METEOSAT ground station, extensive science library.

Number of trainees: 30

Entry requirements: B.Sc.

Degree/Diploma/Certificate awarded: Certificate

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: None

Monthly room and board and incidental expenses: N/A

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants:
Foreign participants can, also, attend the course, free of charge.

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Remote Sensing and
Environment, Satellite Communications and Navigation

Geographical preference: --

INDIA

A. INDIAN SPACE RESEARCH ORGANISATION (ISRO), DEPARTMENT OF SPACE

Antariksh Bhavan, New BEL Road
Bangalore-560 094 INDIA

Telex: 0845-2499
Fax: 0812-334229
Tel.: 0812-334474
Cable: ISRO, Bangalore

Contact person: Mr. K. Narayanan

Principal function(s) of institution: R&D in Space Sciences, Technology and Applications. Execution of National Space Programme at its establishments.

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Development of space and ground hardware for Satellite Communications and applications, specialized applications involving digital communication techniques, rural telecommunication systems, emergency communications; data collection and relay.
Research: Satellite switched TDMA, Ku band payload, Advanced earth station technology, VSAT technology, Satellite navigation and Radio determination.

Duration/Frequency/Language(s) of instruction:
18 months ME/M Tech /Every year/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: N/A

Facilities: Details given in SHARES Brochure

Number of trainees: Up to 10

Entry requirements: Bachelor's Degree in Eng/Master Degree in Science

Degree/Diploma/Certificate awarded:

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material:
No course fee is charged for participants covered under Sharing of Experience in Space (SHARES) programme

Monthly room and board and incidental expenses: Nominal rate charged for accommodation.

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants:
Yes. Financial support ranges from Rs. 3000/- to Rs. 4500/- per month for participant depending on their background and experince.

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Satellite communications

Geographical preference: --

B. SPACE APPLICATIONS CENTRE (SAC)

SAC P.O. Ahmedabad 380 053, India

Telex: 012-239/012-261 Tel.: 446099/447043 Cable: SPACE

Contact person: Director, Space Applications Centre (SAC), Jodhpur Tekra, Ahmedabad 380053, India

Principal function(s) of institution: Training, education, research and development, specific projects with users

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Specialized courses on relevant subjects are organized periodically. Typical courses include both formal instruction and on-the-job training. Training to individuals in selected fields of satellite communication for longer duration (up to 6 months) possible

Research: Satellite earth station technology, data communication, communication techniques, systems engineering, operations training

Duration/Frequency/Language(s) of instruction: 12 weeks (3-4 weeks for individuals)/Annually/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 30%/25%/5%/40%

Facilities: Experimental satellite earth stations, research and development laboratories and production facilities for earth station and satellite payload equipment; integration and test facilities are also available

Number of trainees: Between 10 and 15 for courses; between 3 and 7 for individual training

Entry requirements: Graduate/postgraduate degree in electronics/communication or experienced engineers from relevant field

Degree/Diploma/Certificate awarded: Certificate of participation

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Approx. US$ 5,000 per year

Monthly room and board and incidental expenses: US$ 250

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Between 8 and 10

Other financial support available for foreign participants: Living expenses, tuition fees and some incidental expenses can be provided

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Any of the areas listed above

Geographical preference: Most of the research pertains to the Indian subcontinent and the Indian Ocean, Bay of Bengal and Arabian Sea regions

JORDAN

INSTITUTION

TELECOMMUNICATIONS COLLEGE

Jordan, Amman, P.O. Box 2703, Jordan

Telex: 21221 Tel.: 713320 Cable: JORTEL

Contact person: Dr. Abdel Fattah Abu Qayyas

Principal function(s) of institution: Education

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Satellite communications technology, which includes principles of satellite communication, RF & BB line calculations, principles of different Intelsat services. Theory of operation and maintenance of components and subsystems of satellite earth stations.

Duration/Frequency/Language(s) of instruction:
2 years (Academic) Program/2 years/Arabic/English
Short courses/on demand/Arabic/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 50%/25%/25%/--

Facilities: Class rooms, laboratory, audio-visual aids, computer based training, BAQA E/S complex.

Number of trainees: Between 10 and 20.

Entry requirements: Higher Secondary School Certificate

Degree/Diploma/Certificate awarded: Academic for 2 years Diploma Program/Professional for short courses

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: About $US 4000

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes.

Specific areas of interest: Exchange of information, instructors and course materials.

Geographical preference: Arab countries

MEXICO

INSTITUTION

UNIVERSIDAD NACIONAL AUTONOMA DE MEXICO, INSTITUTO DE GEOFISICA

Ciudad Universitaria, Coyoacan, Mexico, D.F., 04510, Mexico

Telex: 5-50-24-86 Tel.: (5) 5-48-10-79

Contact person: Dr. Silvia Bravo, Dr. Gerardo Suarez Reynoso

Principal function(s) of institution: Education and Research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: --
Research: Development and operation of telemetric seismic and volcanic stations via satellite

Duration/Frequency/Language(s) of instruction:
semestral/each two semestres/Spanish

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: MSc. 70%/--/--/30% MSc and 100% PhD

Facilities: Electronic shop, laboratories, personnel, library, logistic support

Number of trainees: Up to 2

Entry requirements: BSc degree and an admission test

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Yes. Variable

Other financial support available for foreign participants:
Yes

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: –

Geographical preference: None

NORWAY

A. INSTITUTION

NORWEGIAN SPACE CENTRE

P.O. Box 85, Smestad, 0309, Oslo 3, Norway

Telex: 0056-78174 SPACE N   Tel.: 47-2-523800
Cable: Satellite   Fax: 47-2-522397

Contact person: Prof. Gunnar Stette, Inst. for Teletekn./radiotekn, O.S. Bragstadsplass 4, 7034 Trondheim

Principal function(s) of institution: The NSC is responsible for coordinating space activities in Norway.

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: Included in teaching at the Technical University of Trondheim, NTH. A special course is given at the university teaching centre, UNIK at Kjeller near Oslo, which is part of University of Oslo. Good opportunities for graduate studies (Masters and Ph.D) and post graduate research at all places.

Duration/Frequency/Language(s) of instruction: Semester/each year/Norwegian

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 80%/20%/-/-

Facilities: No particular

Number of trainees: Depends on level of course. Contact persons can be contacted.

Entry requirements:

Degree/Diploma/Certificate awarded: Only normal diplomas

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material:
Normal university fees (low).

Monthly room and board and incidental expenses: NOK 4-5.000

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: The only fellowships/scholarships opportunities available are on post-graduate or visiting scientist basis. Number of opportunities is limited.

Other financial support available for foreign participants:

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Remote Sensing

Geographical preference: None

B. INSTITUTION

NORWEGIAN TELECOM, RESEARCH DEPARTMENT

P.B. 83, 2007 KJELLER, Norway

Telex: 19672 Tel.: 47-6-809100

Contact person: –

Principal function(s) of institution: Research and Development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Course in "Satellite Communications" given at University of Oslo (UNIK) by lectures from our department
Research: Research within satellite telecom comprises following activities:

- system planning
- earth station technology
- propagation and antennas
- moderation and coding/encryption

for the following applications:

- broadcasting
- mobile services
- business services

Duration/Frequency/Language(s) of instruction:
Semester/annually/Norwegian

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --

Facilities: --

Number of trainees: --

Entry requirements: --

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes.

Specific areas of interest: Foreseeable activities in developing countries will be coordinated by NORAD.

Geographical preference: --

PAKISTAN

INSTITUTION

PAKISTAN SPACE AND UPPER ATMOSPHERE RESEARCH COMMISSION (SUPARCO)

Off University Road, Sector 28, Gulzar-e-Hijri,
P. O. Box 8402, Karachi 75270, Pakistan

Telex: 25720 SPACE PK Tel.: 471001-5 Cable: SUPARCO

Contact person: Dr. A. Majid

Principal function(s) of institution: Research and development in space science and technology

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Communication Satellite System design, evaluation, technical studies, data acquisition/interpretation, small ground terminals/receivers.

Duration/Frequency/Language(s) of instruction:
1 week/Annual/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 30%/20%/--/50%

Facilities: Satellite Tracking Stations

Number of trainees: Up to 2.

Entry requirement: Engineering degree in Electronics and Communications

Degree/Diploma/Certificate awarded: Certificate is awarded on successful completion of the training course

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: US$ 150

Monthly room and board and incidental expenses: US$ 500 per week

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific area of interest: --

Geographical preference: Developing countries of ESCAP and ESCWA regions under TCDC Programme.

PHILIPPINES

INSTITUTION

PHILIPPINE COMMUNICATIONS SATELLITE CORPORATION

11th Flr., Telecoms Plaza, Sen. Gil J. Puyat Avenue, Makati, Metro Manila, Philippines

Telex: 63586 POTC PN Tel.: 815-8406 Cable: POTCEO

Contact person: Mr. G.T. Parazo, Asst. Station Manager

Principal function(s) of institution: Satellite communications service

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: Operation and maintenance of an earth station for satellite communications

Duration/Frequency/Language(s) of instruction: 6 months/As needed/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 3 months/3 months/--/--

Facilities: Three standard "A" earth stations, one 12-meter antenna E/S with RF equipment and auxiliary equipment and one standard B TVRO E/S

Number of trainees: Up to 12

Entry requirements: Registered electronics and communications engineers or radio technicians with 1st class radio telephone or telegraph operators licence

Degree/Diploma/Certificate awarded: Certificate of completion

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: In 1985, P 7,000.00

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Technical exchange programme with ASEAN members with earth station and other communications facilities

Geographical preference: None

SOUTH AFRICA

A. INSTITUTION

COUNCIL FOR SCIENTIFIC AND INDUSTRIAL RESEARCH (CSIR)

P.0. Box 395, Pretoria 0001, South Africa

Telex: 3-21312 Tel.: 869211

Contact person: Dr. C.W. Louw, Foundation for Research Development, CSIR

Principal function(s) of institution: --

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: --
Research: Radio-wave propagation and its effects, inter alia, on earth-satellite communications

Duration/Frequency/Language(s) of instruction: --/--/--

Allocation of time spent in Classroom/Laboratory/Field Work/Independent research: --/--/--/--

Facilities: --

Number of trainees: --

Entry requirements: B.Sc. (Hon) or B.Sc. (ENG)

Degree/Diploma/Certificate awarded: None

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: Can be arranged at University residence at R 20 per day

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: Funds are available to support visiting scientists to work in fields of mutual interest

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: --

Geographical preference: Southern Africa

B. INSTITUTION

SOUTH AFRICAN BROADCASTING CORPORATION

P.O. Box 8606, Johannesburg 2000, South Africa

Telex: 4-24116 SA Tel.: 714-3342 Cable: BROADCAST SA

Contact person: Mr. H.J. Duncan, Director, Liaison and Research

Principal function(s) of institution: Research, development, establishment and operation

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Research: Establishing a satellite distribution system throughout the Republic of South Africa; atmospheric attenuation (rain/dust); Earth station sizes; digital systems; enhanced coding systems (B-MAC etc.)

Duration/Frequency/Language(s) of instruction: --/--/--

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --/--/--/--

Facilities: A major broadcasting organization with full training and research laboratory facilities

Number of trainees: Between 2 and 6

Entry requirements: Engineering diploma

Degree/Diploma/Certificate awarded: None

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES

Specific areas of interest: --

Geographical preference: Neighbouring states (Lesotho, Swaziland, Botswana, Namibia, Zimbabwe and Zambia)

SWEDEN

A. INSTITUTION

SWEDISH NATIONAL SPACE BOARD

Box 4006, S-171 04 Solna, Sweden

Telex: 17128 SPACECO S Tel.: +4686276480 Fax: 4686275014

Contact person: --

Principal function(s) of institution: Central planning and funding agency for Swedish space activities

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: Space communication, satellite and earth terminal systems, satellite control

Duration/Frequency/Language(s) of instruction: --/--/--

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --/--/--/--

Facilities: --

Number of trainees: --

Entry requirements: M.Sc.

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: Contact Swedish Institute, Box 7434, S-10391 Stockholm

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Contact Board for further information

Geographical preference: --

B. INSTITUTION

SWEDISH SPACE CORPORATION

P.O. Box 4207, S-171 04 Solna, Sweden

Telex: 17128 SPACECO
Cable: SPACECORP STOCKHOLM
Tel.: +4686276200
Fax: 468-987069

Contact person: Lars Backlund

Principal function(s) of institution: From feasibility studies to the practical application of space technology

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
- communication systems design
- satellite systems engineering
- earth terminals systems engineering
- satellite control
- procurement and programme management of space and earth segments
- zero-gravity processing
- sounding rocket and balloon experiments
- research satellites

Duration/Frequency/Language(s) of instruction: 1-4 weeks/Annually/ English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 75%/25%/--/--

Facilities: On-site and "hands-on" training can be provided for all aspects of a satellite communications system

Number of trainees: Between 1 and 5

Entry requirements: M.Sc., electrical engineering or physics or equivalent

Degree/Diploma/Certificate awarded: Certificates

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Separate quotations

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/fellowship opportunities for foreign participants: Case by case

Other financial support available for foreign participants: Case by case

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Feasibility studies of regional and/or national satellite communications systems

Geographical preference: None

C. INSTITUTION

CHALMERS UNIVERSITY OF TECHNOLOGY, DEPARTMENT OF RADIO AND SPACE SCIENCE

S-412 96 Göteborg, Sweden

Telex: 854-2400 Tel.: 46-31810100

Contact person: Prof. J. Askne

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Course: Communications for M.Sc. programme

Research: --

Duration/Frequency/Language(s) of instruction: 6 hours per week/Annually/Swedish

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 80%/20%/--/--

Facilities: Observatory with 20 m and 25 m antennas equipped with receivers for 1-115 GHz

Number of trainees: --

Entry requirements: B.Sc.

Degree/Diploma/Certificate awarded: --

2. COSTS OF PROGRAMMES

Costs of tuition, texts and related research material: No tuition, but the number of foreign students is limited

Monthly room and board and incidental expenses: $US 350

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: Contact Swedish Institute, Box 7434, S-103 91 Stockholm

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Related to ongoing research activities

Geographical preference: --

THAILAND

INSTITUTION

CHULALONGKORN UNIVERSITY, DEPARTMENT OF ELECTRICAL ENGINEERING

Phya-thai Rd., Bangkok 10500, Thailand

Telex: -- Tel.: 2525001, ext. 183

Contact person: --

Principal function(s) of institution: Education, research and development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: Development of communication satellites; frequencies and satellite orbit; multiple access; analog and digital satellite systems; characteristics of satellite transponder; intermodulation and AM/FM conversion; interference problems; earth station and system design considerations

Duration/Frequency/Language(s) of instruction: 12 weeks/3 hours per week/Thai

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 80%/--/--/20%

Facilities: IBM 3031

Number of trainees: Between 6 and 15

Entry requirements: Certificate

Degree/Diploma/Certificate awarded: Academic certificate

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: $US 500 per course

Monthly room and board and incidental expenses: $US 2,000

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: The UNESCO ASTINFONET Pilot project

Geographical preference: None

UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND

A. INSTITUTION

BRITISH TELECOM INTERNATIONAL TRAINING COLLEGE

Leafield, Oxford, England OX 8 5PB, United Kingdom

Telex: 837481 BTI G Tel.: 0993 87 261

Contact person: --

Principal function(s) of institution: Vocational training/education

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Satellite earth station principle and practice
Supplementary courses:
- principles of digital logic
- digital transmission techniques
- microwave link analyzer
- microwave theory and measurements
- Satstream training

Duration/Frequency/Language(s) of instruction: 6 weeks/On demand/English, supplementary courses between 1 and 3 weeks duration

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 45%/40%/15%/--; supplementary courses: 50%/50%/--/--

Facilities: Fully equipped lecture rooms and practical facilities

Number of trainees: Between 6 and 12

Entry requirements: Diploma in communication studies

Degree/Diploma/Certificate awarded: Certificate of attendance

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: 2,418 British Pounds; supplementary courses between 360 British Pounds and 1,365 British Pounds

Monthly room and board and incidental expenses: 10 British Pounds + VAT weekly (5 x 24 hours)

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Operation and maintenance of satellite earth stations

Geographical preference: None

B. INSTITUTION

DUNDEE UNIVERSITY

Dundee DD1 4HN, Scotland, United Kingdom

Telex: 9312110826 DUG Fax: 382-2022830

Contact person: Admissions officer

Principal function(s) of institution: Training and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Electrical engineering first degree course

Duration/Frequency/Language(s) of instruction:
4 years/Annually/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 60%/35%/--/5%

Facilities: Fully equipped teaching laboratories, computing facilities

Number of trainees: Between 5 and 80

Entry requirements: High school qualifications

Degree/Diploma/Certificate awarded: B.Sc., M.Sc., Dip.Sc.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: B.Sc. - 578 British pounds (Home and EC), 5,250 British pounds (Overseas); Dip.Sc. and M.Sc.- 1,800 British pounds (Home and EC), 5,250 British pounds (Overseas) (1988-89 figures)

Monthly room and board and incidental expenses: 400 British Pounds

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Yes

Other financial support available for foreign participants: ODA/British Council; must be applied for in applicant's own country

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Atmospheric effects

Geographical preference: None

C. INSTITUTION

UNIVERSITY OF SURREY, CENTRE FOR SATELLITE ENGINEERING RESEARCH

Guildford GU 25XH, United Kingdom

Tel.: 483-509131 Fax: 483-34139

Contact person: Prof. B.G. Evans

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: On-board processing; satellite communications studies and networks; satellite engineering/communications; antennas and propagation; coding and satellite engineering/communication; modulation; command and checkout; reduced bit rate speech; access schemes. Also one week course on satellite communications, spacecraft engineering, introduction to advanced networks.

Duration/Frequency/Language(s) of instruction:
1 year/Annually/English (M.Sc.)

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 60%/15%/--/25%

Facilities: Digital processing laboratory

Number of trainees: Up to 40 (M.Sc. course). Special training schemes can be organized outside the M.Sc. course and possibly in collaboration with industry

Entry requirements: M.Sc., 2 (ii) B.Sc. or equivalent

Degree/Diploma/Certificate awarded: Diploma

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Fees (overseas) 6,500 British Pounds per year; maintenance 4,000 British Pounds per year. One week course -750 British Pounds

Monthly room and board and incidental expenses: 400 British Pounds

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: British Council; Commonwealth scholarships; ITV fellowships

Other financial support available for foreign participants: Various

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Low cost satellites; applications of LEO satellites; domestic and regional systems; spacecraft engineering; on-board processing, speech processing.

Geographical preference: None

D. INSTITUTION

ABERDEEN UNIVERSITY

Bedford Road, Aberdeen, AB9 2VE, United Kingdom

Telex: 73458 UNIABN G Tel.: 44-224-272778
Fax: 44-224-491179

Contact person: C.T. Spracklen

Principal function(s) of institution: Education, Research and Development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: --
Research: --

Duration/Frequency/Language(s) of instruction: 1 semester/Yearly/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 70%/20%/--/10%

Facilities: Workstations; satcom, simulation and experimental facilities

Number of trainees: up to 30

Entry requirements: appropriate first degree

Degree/Diploma/Certificate awarded: M.Sc., Ph.D.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: 6,000 British Pounds per year

Monthly room and board and incidental expenses: 300 British Pounds per month

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Yes, 10 available.

Other financial support available for foreign participants: Yes. Full cost of tuition and living expenses

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Satellite communications

Geographical preference: None

E. INSTITUTION

UNIVERSITY OF BRADFORD, DEPARTMENT OF ELECTRICAL ENGINEERING

Richmond Road, Bradford BD7 1DP, United Kingdom

Telex: 51309 UNIBFD G Tel.: 44 274 733466

Contact person: Professor S.K. Barton

Principal function(s) of institution: Education and Research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Part of an MSc in RF Communication Systems. Research in slant-path propagation for Fixed and Land mobile Satellite Services. Research in modulation, coding and acess techniques for satellite communications.

Duration/Frequency/Language(s) of instruction:
1 week/yearly/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 50%/10%/-/40%

Facilities: Airborne transmitter, vehicle equipped as receiver, Microwave laboratories, Anechoic chambers, Simulation software, Oxenhope Moor Experimental Station. Satellite receivers.

Number of trainees: Between 10 and 30.

Entry requirements: BSc

Degree/Diploma/Certificate awarded: MSc, MPhil, PhD

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material:
£6,500 per annum

Monthly room and board and incidental expenses: Approximately £1,000

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest:

Geographical preference: None

F. INSTITUTION

UNIVERSITY OF BRISTOL CENTRE FOR COMMUNICATIONS RESEARCH

Queens Building, University of Bristol, Bristol, UK

Telex: 445938 BSUNIVG Tel.: 44 272 303259
Fax: +44 272 255265

Contact person: Professor J.P. McGeeham

Principal function(s) of institution: Research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Final year undergraduate degree course option. R&D Activities in Satellite Communications Technique & Satellite Navigation Systems.

Duration/Frequency/Language(s) of instruction:
10 hours/year/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 10 hours/-/-/-

Facilities: Well founded laboratory and support staff

Number of trainees: Between 20 and 50.

Entry requirements: A-levels/undergraduate entry

Degree/Diploma/Certificate awarded:

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material:
Standard University fees.

Monthly room and board and incidental expenses:

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants:
Yes. 2 fellowships are available.

Other financial support available for foreign participants:
Yes. Variable from year to year.

4. COLLABORATION WITH DEVELOPING COUNTRIES:

Specific areas of interest: Satellite communications

Geographical preference: None

G. INSTITUTION

UNIVERSITY OF ESSEX, DEPARTMENT OF MATHEMATICS

Telex: 98440 UNILIB G Tel.: +44 206 873040
Fax: +44 206 873598

Contact person: Professor A.R. Holt

Principal function(s) of institution: Education and Research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Modelling of attenuation and depolarisation on earth-satellite links; modelling of rainscatter interference between terrestrial and satellite microwave links. Analysis of propagation data from satellite experiments.

Duration/Frequency/Language(s) of instruction:

Allocation of time spent in Classroom/Laboratory/Field Work/ Independent Research:

Facilities: excellent library facilities; access to colour graphics workstations. Software for calculation, scattering from hydrometers and various propagation parameters.

Number of trainees: 1

Entry requirements: Good first degree qualification in applied maths, or in electrical engineering or physics with good mathematical content.

Degree/Diploma/Certificate awarded: MSc by dissertation or Ph.D

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material:
1991/2: Tuition £6,630; £2104 for EC Students.

Monthly room and board and incidental expenses:
Approximately £370 for first year; £450 subsequently (1st year normally given university accommodation.)

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: This University has no fellowships or scholarships available to persons from outside (occasionally scholarship is available to graduates of this university). There are awards available through the ORS scheme which reduces the fee from Ł6,630 to Ł2,104. Such awards are available through national competition.

Other financial support available for foreign participants:

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: --

Geographical preference: --

H. INSTITUTION

UNIVERSITY OF KENT, PHYSICS LABORATORY

Physics Laboratory, University of Kent, Canterhury, Kent, CT27NR, England

Telex: 965449 Tel.: (0)227-764000 Fax: (0)227-762616

Contact person: Dr. J.C. Zarnecki

Principal function(s) of institution: Education and Research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Some coverage of satellite communications is included within the undergraduate teaching of the Electronic Engineering Laboratories.

Duration/Frequency/Language(s) of instruction:
A few weeks/occurs once in a 3 year degree programme/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research:
100%/-/-/-

Facilities: Extensive computing and networking facilities;
library facilities

Number of trainees:

Entry requirements: For undergraduate entry, the equivalent of UK A level passes (2 minimum); for Postgraduate study a good first degree at a recognized University.

Degree/Diploma/Certificate awarded: Undergraduate: B.Sc., Postgraduate - M.Sc., M. Phil, Ph.D.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material:
Undergraduate UK+E.E.C Ł2,783 p.a., Overseas Ł6,253 p.a., Postgraduate UK + E.E.C Ł1,985 p.a., Overseas Ł6,730 p.a.

Monthly room and board and incidental expenses: Accommodation, etc: Ł816-1040 bed and breakfast on Campus, other meals extra. Cost is per academic year. Ł30 per week for self-catering accommodations on campus.

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants:
Yes. One fellowship

Other financial support available for foreign participants:
Yes. The above refers to a specific University of Kent fellowship/scholarship. There are many other scholarships available nationally, through a large number of organizations (e.g. Royal Society, British Council, etc.)

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes.

Specific areas of interest:

Geographical preference: None

UNITED STATES OF AMERICA

A INSTITUTION

UNIVERSITY OF WASHINGTON, DEPARTMENT OF ELECTRICAL ENGINEERING

Seattle, Washington 98195, USA

Tel.: (206) 543-2150 Fax: (206) 543-3842

Contact person: Dr. Thomas A. Seliga, Professor and Chair

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses:

Electronic and Computers
Control Systems & Circuits
Electric Energy
Electromagnetics, Optics & Acoustics
Materials and Devices
Signal Processing & Communications

Research:

Wave propagation and scattering; remote sensing; acoustics; photonics and fiber optics; signal, speech and image processing; computer vision; communications and information theory; automatic control systems; robotics; electronic materials, devices and sensors; microelectronics processing and fabrication; electronic systems; VLSI design; simulation and testing; computer networks; multiprocessor systems; computer engineering; power and energy system dynamics and control; power electronics; electric drives; artificial neural networks; expert systems.

Duration/Frequency/Language(s) of instruction:
One Quarter Each/Annually/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 50%/–/–/50%

Facilities: Well-equipped laboratories including state-of-the-art computer facilities, anechoic chamber, radar systems, test instrumentation, robotic systems, microelectronics facilities, electro-optic facilities, microsensor laboratory, etc.

Number of trainees: --

Entry requirements: B.Sc. in Electrical Engineering

Degree/Diploma/Certificate awarded: M.Sc. or Ph.D.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Regular University of Washington tuition applies (varies with residency); texts are responsibility of individual, research facilities generally provided.

Monthly room and board and incidental expenses:
Around $1,000

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Approximately 25-50 teaching or research assistantship positions may be available for foreign students.

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest:
Communications, electromagnetics, remote sensing, signal and image processing, control systems and robotics, computers, electronic circuit design, microelectronics, photonics, energy systems.

Geographical preference: None

B. NATIONAL AERONAUTICS AND SPACE ADMINISTRATION (NASA)

Washington, DC 20546, USA

Telex: 89530 NASA Tel.: 202-453-1000

Contact person: Dr. Chester McKee, Director, Associateship and Fellowship Programs, National Research Council (NRC), 2101 Constitution Avenue, Washington, DC 20418

Principal function(s) of institution: Scientific and technical research in the fields of aeronautics and space exploration

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: None
Research: Resident Research Associateships (RRA) as guest investigators in laboratories at seven NASA Research Centers and the Jet Propulsion Laboratory. Advanced basic research is in all areas of space science and technology, with particular topics identified in yearly brochures published by and available from the NRC

Duration/Frequency/Language(s) of instruction: One year/Continuous/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 0%/Variable/Variable/Variable

Facilities: Full range of laboratory, field and space equipment

Number of trainees: Approximately 200 U.S. and foreign trainees per year for all areas of aeronautical and space research

Entry requirement: Ph.D. or equivalent

Degree/Diploma/Certificate awarded: None

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: None

Monthly room and board and incidental expenses: Stipend paid for self-support covers all living expenses

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Available through NRC. Number varies, but approximately 80 per year in the last few years

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: All areas of space science

Geographical preference: None

ZIMBABWE

INSTITUTION

UNIVERSITY OF ZIMBABWE

M.P. 167, Mount Pleasant, Harare, Zimbabwe

Tel.: 303211

Contact person: Dr. M. Zinyowera, Box BE150, Belvedere, Harare

Principal function(s) of institution: Education, research, development and teaching

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Satellite communications at the Post and Telecommunications Cooperation
Research: --

Duration/Frequency/Language(s) of instruction: In service/Annually/ English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --/--/--/--

Facilities: Earth satellite station

Number of trainees: Between 4 and 10

Entry requirements: General certificate of education - advanced level

Degree/Diploma/Certificate awarded: Degree, certificate

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Funded by the State

Monthly room and board and incidental expenses: Provided

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: State fellowships are available

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: --

Geographical preference: None

IV

SATELLITE METEOROLOGY

ARGENTINA

INSTITUCION

COMISION NACIONAL DE ACTIVADES ESPACIALES

Av. Dorrego 4010/18 (1425) Buenos Aires, Argentina

Teléfono: 771-5810, 774-9310   Fax: 541-774-5703

Persona a contactar: Dr. Jorge Sahade

Funciones principales de la institución: Asesoramiento al P.E.N. en materia espacial, co-ordinación de la actividad espacial en la Argentina

1. PROGRAMAS ACADEMICOS Y CIENTIFICOS

Lista de cursos y actividades de investigación:
Cursos: --
Investigaciones: Proyecto de caracterización espacio-temporal de variables termohidrodinámicas en niveles estratosféricos

Duración/Frecuencia/Idioma(s) de enseñanza: --/--/--

Distribución del tiempo en Trabajo en clase/Laboratorio/Trabajo en el terreno/Investigaciones independientes: --/--/--/--

Tipo de servicios o instalaciones: --

Número de participantes: --

Calificaciones académicas (mínimas) regueridas: Grado en disciplinas afines a la especialidad

Certificados o diplomas extendidos por la institución: Certificados

2. COSTO DE LOS PROGRAMAS

Costo de los cursos, de los libros de texto y de los materiales de investigación afines: --

Gastos mensuales de alojamiento y manutención y gastos menudos: --

3. DISPONIBILIDAD DE BECAS

Disponibilidad de becas para participantes extranjeros: Variable según el caso

Otra posibilidades de ayuda financiera para participantes extranjeros: Alojamiento con tarifas preferenciales en el Centro Espacial San Miguel

4. COLABORACION CON LOS PAISES EN DESARROLLO: Sí

Esfera de interés: Formación de recursos humanos, intercambio de tecnologias espaciales, asesoramiento, diseño de proyecto

Region geográfica determinada: Con todas las regiones

AUSTRALIA

A. INSTITUTION

UNIVERSITY OF TASMANIA

Department of Geography, Box 252C GPO, Hobart, Tasmania 7001, Australia

Telex No.: 58150 UNTAS Tel.: 202101 Cable: TASUNI

Contact person: Dr. M. Nunez

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Undergraduate course in climatology
Research: Examination of sea surface temperatures, evapotranspiration, theoretical aspects of interpretation

Duration/Frequency/Language(s) of instruction: 27 weeks/Annually/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 70%/10%/10%/10%

Facilities: Image processing system

Number of trainees: Between 8 and 20

Entry requirements: Second year science subjects

Degree/Diploma/Certificate awarded: None

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: No tuition fees. However, the Australian Government's overseas students' charge applies (currently $A 3,500 per year)

Monthly room and board and incidental expenses: Min. $A 500

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants:Up to 8 each year are available

Other financial support available for foreign participants: Various bilateral assistance schemes, e.g. Colombo Plan, South Pacific Aid Programme, Malaysia Scholarship, Mara Scholarship

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Solution of climatological problems (e.g., pollution)

Geographical preference: None

B. INSTITUTION

MACQUARIE UNIVERSITY

School of Mathematics, Physics, Computing and Electronics, North Ride, NSW 2113, Australia

Telex: AA22377 MACQUNI Tel.: (02) 8058908

Contact person: Prof. D.J. Skellern

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: --
Research: GMS-3, S-band high resolution pictures

Duration/Frequency/Language(s) of instruction: --/--/--

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --/--/--/--

Facilities: Fixed 6M GMS-3 installation, high resolution
S-band, tracking 4 M dish, NOAA-TIROS receiving station

Number of trainees: Up to 2 per year

Entry requirements: B.Sc. or B.E.E.

Degree/Diploma/Certificate awarded: Master of Science or Master of Science (Honours)

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: Approx. $A 600 suggested minimum

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: 6 post-graduate scholarships per year

Other financial support available for foreign participants: Visiting fellowships for senior scholars - airfare plus 8 weeks' living allowance

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Surface temperature profiles, land and seas, for fisheries, environmental pollution, rainfall, floods, etc.

Geographical preference: --

C. INSTITUTION

UNIVERSITY OF MELBOURNE, METEOROLOGY DEPARTMENT

Parkville, Victoria 3052, Australia

Telex: AA 35185 Tel.: (03) 3446912

Contact person: Dr. T. Gibson

Principal function(s) of institution: Research and education

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Course: Basic principles of satellite meteorology, applications of analogue and digital satellite data
Research: Use of satellite imagery and radiance values in synoptic climatology, structure and evolution of atmospheric features, development of video-based hardware for processing of satellite imagery

Duration/Frequency/Language(s) of instruction:
8 weeks/Annually/ English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 40%/60%/--/--

Facilities: Direct read-out of polar-orbiting and geostationary satellite imagery, computing facilities

Number of trainees: Between 1 and 8

Entry requirements: Second year university level in mathematics or physics

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Full-time overseas students are currently charged tuition fees of approx. $A 1,500 per year

Monthly room and board and incidental expenses: Approximately $A 180

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Synoptic climatology

Geographical preference: Southern hemisphere

D. INSTITUTION

JAMES COOK UNIVERSITY OF NORTH QUEENSLAND

Post Office, Townsville, Qld 4811, Australia

Tel.: 077814111

Contact person: --

Principal function(s) of institution: --

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Remote sensing, satellite meteorology
Research: Included in GE 217 Second year climatology course; research into hydrometeorology on wet tropical coasts; studies of rainfall systems on wet tropical coasts; evaluating the hydrological impact

Duration/Frequency/Language(s) of instruction: Geography: 15 hours/Semester/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --/--/--/--

Facilities: Weather chart facsimile receiver, satellite (GMS) receiving equipment requested for 1986

Number of trainees: --

Entry requirements: --

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Coral reef management; hydro-meteorology

Geographical preference: Tropical region

A U S T R I A

INSTITUTION

INSTITUT FUR NACHRICHTENTECHNIK UND WELLENAUSBREITUNG

Inffeldgasse 12, A-8010 Graz, Austria

Telex: 31221 Tel.: 316 7061/7441

Contact person: Prof. W. Riedler

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: --
Research: Development of low-cost meteorological satellite receiver units

Duration/Frequency/Language(s) of instruction: --/--/--

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --/20%/10%/70%

Facilities: Development laboratories

Number of trainees: Between 1 and 2

Entry requirements: Bachelor, Master degree preferred

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: S 5,000 approximately

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: 2 fellowships per year offered under the auspices of the United Nations Programme on Space Applications

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: --

Geographical preference: None

BANGLADESH

INSTITUTION

BANGLADESH SPACE RESEARCH AND REMOTE SENSING ORGANIZATION (SPARRSO)

Sher-e-Bangla Nagar, Agargaon, G.P.0. Box 529, Dhaka, Bangladesh

Telex: 642215 SRSBT Tel.: 313329, 313317 Cable: SPARRSO

Contact person: Dr. A.M. Choudhury, Director

Principal function(s) of institution: Research, development and training

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Principles of satellite meteorology, interpretation of satellite data for agroclimatology, weather analysis, forecasting
Research: Analysis and interpretation of meteorological data for hydrological, agroclimatic, weather and oceanographic applications

Duration/Frequency/Language(s) of instruction: Variable/Variable/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 50%/30%/10%/10%

Facilities: Meteorological satellite and LANDSAT/SPOT ground station, DCP, computers, image processing systems, remote sensing equipment

Number of trainees: Between 30 and 50

Entry requirements: Science/engineering graduate

Degree/Diploma/Certificate awarded: Professional certificate/diploma

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Variable

Monthly room and board and incidental expenses: $US 60 per day

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Agriculture, water resources, fisheries, meteorology, oceanography, forestry

Geographical preference: Preferably with neighbouring countries

BELGIQUE

A. ETABLISSEMENT

UNIVERSITE DE LIEGE

Place du 20 Août, 7, 4000 Liège, Belgique

Telex: 41397 Téléphone: 041/665556

Responsable: Prof. J. Alexandre

Vocation(s) principale(s) de votre établissement: --

1. PROGRAMME DE CULTURE GENERALE ET SCIENTIFIQUES

Description des cours et activités de recherche:
Cours: --
Recherche: Recherches sur la localisation et l'extension horizontale de la zone de convergence intertropicale: variations temporelles (impact climatique en basse latitude) et analyse des amas nuageux convectifs à partir de l'imagerie trihoraire de METEOSAT

Durée/Fréguence/Langue(s) d'enseignement: --/--/--

Répartition du temps alloué en Salle de classe/Laboratoire/Travail sur le terrain/Recherche indépendante: --/--/--/--

Moyens dont dispose l'établissement pour exécuter les programmes: Système de réception automatique d'images du satellite METEOSAT

Nombre de participants: Entre 1 et 3

Critères régissant l'admission: Diplôme universitaire (specialité géographie, agronomie ou météorologie)

Certificats ou diplômes obtenus: Néant

2. COUT DES PROGRAMMES

Frais de scolarité, manuels et autres matériaux de recherche: --

Frais mensuels de logement et de subsistance et faux frais: --

3. POSSIBILITES DE BOURSES D'ETUDES OU DE PERFECTIONNEMENT

Possibilités de bourses d'études ou de perfectionnement pour des participants étrangers: --

Existence d'autres possibilités d'octroi d'une aide financière pour participants étrangers: --

4. COLLABORATION AVEC PAYS EN DEVELOPPEMENT: Oui

Domaines qui vous intéressent: Interprétation des documents provenant du satellite METEOSAT en relation avec les bulletins et cartes météorologiques et les sondages aérologiques

Préférence géographique: Afrique

B. ETABLISSEMENT

UNIVERSITE CATHOLIQUE DE LOUVAIN

Place de l'Université, 1, B-1348 Louvain-la Neuve, Belgique

Telex: 59516/UCL AC Téléphone: 010/47.21.11

Responsable: Professeur P. Macq, Recteur

Vocation(s) principale(s) de votre établissement: Enseignement, recherche, développement

1. PROGRAMMES DE CULTURE GENERALE ET SCIENTIFIQUES

Description des cours et activités de recherche: Cours et/ou recherches dans les domaines suivants: Météorologie, dynamique du climat et physique de le couche planetaire telecommunications et teledetection hyperfrequence, telecommunications par satellite et transmission atmospherique (dans ces deux derniers domaines, uniquement des programmes de recherches)

Durée/Fréquence/Langue(s) d'enseignement: La durée depend des sujets traités et des préalables acquis par l'étudiant/--/français

Répartition du temps alloué en Salle de classe/Laboratoire/Travail sur le terrain/Recherche indépendante: La répartition exacte dépend des sujets. On peut dire que le travail se répartit environ en trois tiers égaux entre le travail théorique en classe, le travail expérimental et le travail indépendant.

Moyens dont dispose l'établissement pour exécuter les programmes: --

Nombre de participants: --

Critères régissant l'admission: Le niveau dépend des cours choisis. Les critères ne peuvent donc pas être définis en général

Certificats ou diplômes obtenus: Diplômes, certificat de spécialisation, licence en sciences appliques, maîtrise, doctorat

2. COUT DES PROGRAMMES

Frais de scolarité, manuels et autres matériaux de recherche: On peut considérer que le coût global d'une année d'études s'élève à environ FB 220.000 par an pour un célibataire. Ce montant comprend le droit d'inscription: FB 23.100 et le logement: environ FB 6,000 par mois

Frais mensuels de logement et de subsistance et faux frais: --

3. POSSIBILITES DE BOURSES D'ETUDES OU DE PERFECTIONNEMENT

Possibilités de bourses d'études ou de perfectionnement pour des participants étrangers: L'UCL octroie chaque année quelque 35 bourses à des ressortissants du tiers monde qui entament des études de postgraduat. Le montant mensuel de la bourse s'élève à FB 20.500 pour un célibataire. Le Centre social universitaire dispense dans certains cas d'une aide financière en cours d'année

Existence d'autres possibilités d'octroi d'une aide financière pour participants étrangers: Des bourses peuvent également être obtenues aupres de l'Administration générale de la Coopération au développement à Bruxelles ainsi qu'auprès du Commissariat général aux relations internationales, également situé à Bruxelles, via le poste diplomatique belge à l'étranger. Enfin, des bourses sont disponibles auprès d'organismes internationaux tels que l'UNESCO, la CEE, etc. Les conditions et les montants de ces bourses, variables selon les organismes, peuvent être obtenus auprès de ceux-ci

4. COLLABORATION AVEC PAYS EN DEVELOPPEMENT: Oui

Domaines qui vous intéressent: Météorologie et climatologie, en particulier dans leurs aspects dynamiques

Préférence géographique: Aucune

C. ETABLISSEMENT

UNIVERSITE LIBRE DE BRUXELLES

Avenue F.D. Roosevelt, 50, B-1050 Bruxelles, Belgique

Telex: 23069 Téléphone: 33-2-6503141 Télégraphique: UNILIB

Responsable: M. A. Ouinet

Vocation(s) principale(s) de votre établissement: Enseignement, recherche, développement

1. PROGRAMMES DE CULTURE GENERALE ET SCIENTIFIQUFS

Description des cours et activités :
Cours: Cours de 2ème cycle (licence en physique et licence en mathématique)
Cours de 3ème cycle: licence spéciale en sciences géophysiques

Durée/Fréquence/Langue(s) d'enseignement: Les cours sont de 15, 30 ou 45 h/année. La licence spéciale s'organise autour de 6 modules de cours, chacun d'environ 150 heures/Français

Répartition du temps alloué en Salle de classe/Laboratoire/Travail sur le terrain/Recherche indépendante: 100%/--/--/--

Moyens dont dispose établissement pour exécuter les programmes: Crédits du Ministère de l'Education nationale

Nombre de participants: Variable

Critères régissant l'admission: Diplôme de ler cycle/de 2ème cycle pour la licence spéciale

Certificats ou diplômes obtenus: Selon les modalités académiques

2. COUT DES PROGRAMMES

Frais de scolarité, manuels et autres matériaux de recherche: Un droit d'inscription est à acquitter auprès de l'Université

Frais mensuels de logement et de subsistance et faux frais: --

3. POSSIBILITES DE BOURSES D'ETUDES OU DE PERFECTIONNEMENT

Possibilités de bourses d'études ou de perfectionnement pour des participants étrangers: Néant

Existence d'autres possibilités d'octroi d'une aide financière pour participants étrangers: Bourses et stages ASE, Agence Générale de la Coopération au Développement, etc.

4. COLLABORATION AVEC PAYS EN DEVELOPPEMENT: Oui

Domaines qui vous intéressent: Météorologie spatiale

Préférence géographique: Aucune

BRAZIL

INSTITUTION

INSTITUTO DE PESQUISAS ESPACIAIS (INPE)

Caixas Postal 515, 12200 Sao José dos Campos, SP, Brazil

Telex: (011) 33530 Tel.: (0123) 22.9977

Contact persons: Dr. Ralf Gielow; Dr. Nelson de Jesus Ferreira

Principal function(s) of institution: Research and development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Courses on station operation and image interpretation; master's and doctoral courses in meteorology (dynamic meteorology, numeric weather forecasting, synoptic meteorology, satellite meteorology, micrometeorology, climatology)
Research: Atmospheric and climate simulation, numeric weather forecasting, meteorological satellite reception stations, automatic remote data collection platforms, automatic image processing systems, image compression techniques, real-time dissemination of meteorological satellite imagery and data

Duration/Frequency/Language(s) of instruction: M.A. - 3 yrs, Ph.D. - 4 yrs/Annually/Portuguese

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --/--/--/--

Facilities: Laboratories, field work facilities when needed

Number of trainees: --

Entry requirements: B.Sc. for Master's courses, M.Sc. for Doctoral courses

Degree/Diploma/Certificate awarded: Diplomas for Master's and Doctoral degrees, certificates for short courses and training

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Graduate courses: no tuition; special arrangements for research materials; other courses/training: special arrangements

Monthly room and board and incidental expenses: About $US 500

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: Organization of American States and other international organizations

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Same areas mentioned in summary of courses and research activities

Geographical preference: None

BULGARIA

A. INSTITUTION

BULGARIAN NATIONAL COMMITTEE ON INVESTIGATION AND EXPLORATION OF OUTER SPACE

Moskovska str. No. 6, Sofia 1000, Bulgaria

Telex: 23351 CLSR BG Tel.: 88 35 03
Cable: CLKI, Moskova No. 6

Contact person: Vladimir Sharov, Institute of Hydrology and Meteorology, Blvd. Lenin, No. 66, Sofia, Bulgaria

Principal function(s) of institution: Research and development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: Satellite observations of clouds for synoptic analysis; vertical temperature profiles; analysis of tropical circulation; retrieval of meteorological fields by satellite data

Duration/Frequency/Language(s) of instruction: 1-3 years/1-3 years/English, Russian

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 20%/30%/--/50%

Facilities: Ground-based facilities

Number of trainees: 1

Entry requirements: University education

Degree/Diploma/Certificate awarded: Professional certificate and/or Ph.D. degree if requested by the candidate

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: $US 800 per month

Monthly room and board and incidental expenses: $US 1,800

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Opportunities available and organized when requested and depending on agreement

Other financial support available for foreign participants: Other financial aid possibilities exist for foreign participants

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Satellite meteorology

Geographical preference: None

B. INSTITUTION

SPACE RESEARCH INSTITUTE

Telex: 23351 IKI BAN BG Tel.: 88 35 03 Fax: (3592) 801347

Contact person: Mr. B. Madjarov

Principal function(s) of institution: Research and development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: Satellite tracking, ground station, mapping. Data acquisition and processing.

Duration/Frequency/Language(s) of instruction: --

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research:

Facilities: Ground satellite receiving station

Number of trainees: 1

Entry requirements: Academic diploma

Degree/Diploma/Certificate awarded:

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material:

Monthly room and board and incidental expenses:

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Yes.

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Mentioned areas on regionl level.

Geographical preference: --

CHAD

INSTITUTION

EFATA

DREM BP 429 N'Djamena

Telex: PNUD Tel.: 51.30.81, 51.30.43 Cable: PNUD

Contact person:

Principal function(s) of institution: La formation temporaire de 60 Agents un Agrométéorologie

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: ce sont des cours de météorologie et d'agrométérologie des pensés aux Agents Techniques en Agrométéorologie. Cours météorologique (c1IX OMM)

Duration/Frequency/Language(s) of instruction:
2 ans/trimestre/Français

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 80%/-/20%/-

Facilities: Pas d'équipement particulier, Mais on prête desappareils de diapositif et de projection pour utilisation

Number of trainees: 20-23

Entry requirements: Niveau BPCT

Degree/Diploma/Certificate awarded:

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material:

Monthly room and board and incidental expenses:

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: None

Specific areas of interest: --

Geographical preference: --

CHILE

INSTITUTION

UNIVERSIDAD DE CHILE, CENTRO DE ESTUDIOS ESPACIALES

Telex: 240523 CENET CL Tel.: 56-2-721816
Fax: 56-2-8441003

Contact person: Ramon Molina

Principal function(s) of institution: Satellite Tracking Station and Satellite Data Applications

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Research: Research in acquisition and processing of satellite data (receiving stations, antennas, processing systems), research in agrometeorology.

Duration/Frequency/Language(s) of instruction: --

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --

Facilities: Receiving and processing stations

Number of trainees: --

Entry requirements: Engineers

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: –

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Above areas

Geographical preference: South America

DENMARK

INSTITUTION

UNIVERSITY OF COPENHAGEN, INSTITUTE OF GEOGRAPHY

Oster Voldgade 10, DK-1350 Copenhagen K, Denmark
Tel.: 4533132105   Fax: 45-33-148105

Contact person: Mr. Henrik Sogaard

Principal function(s) of institution: Education and Research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: The use of satellite data for estimating the surace energy balance; monitoring water balance/soil moisture and evapotranspiration using combined thermal, IR and visible satellite data.

Research: Mapping and monitoring of agricultural land-use and environmental conditions; monitoring of natural vegetation andcrop development; monitoring of agrometeorological parameters, such as rainfall, temperature and actual evapotranspiration; urban land use mapping

Duration/Frequency/Language(s) of instruction: 12 weeks/every autumn/English (only when foreign students)

Allocation of time spent in Classroom/Laboratory/Field Work/ Independent Research: 33%/33%/-/33%

Facilities: The institute has 10 satellite image processing systems, all PC-based and equipped with locally developed software, CHIPS. Of these, 3 are located in the image processing lab with open access for students and trainees. In addition we are equipped with a number of relevant peripherals, incl. equipment for GIS-type work. Radiometers a.s.o. for field measurements and a large amount of agromet sensors are available.

Number of trainees: Between 4 and 10

Entry requirements: B.Sc.

Degree/Diploma/Certificate awarded: Certificates are awarded after each course

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material:
US$ 500/150/150/

Monthly room and board and incidental expenses:

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants:
For trainees from developing countries scholarships are in some cases available through DANIDA.

Other financial support available for foreign participants: Yes. According to official exchange programmes.

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Image processing, GIS

Geographical preference: Africa

ECUADOR

INSTITUTION

CLIRSEN/COTOPAXI GROUND STATION

Seniérges s/n y Gral. Paz y Miño, Edif.
IGM, 4to. piso, Quito, Ecuador

Telex: 2775 CLIRSN ED Tel.: 549-472/581-063
Fax: 593-2-581-066

Contact person: Mr. Edgar Penaherrera

Principal function(s) of institution: Receiving, recording and processing satellite data and forming the national natural resources inventory

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: Satellite meteorology math algorithms to solve atmospheric problems in receiving satellite information over equatorial zones. (These courses are not given on a regular basis. They are only given under institutional needs.)

Duration/Frequency/Language(s) of instruction: --

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --

Facilities: Antenna, data collection platforms and receiving equipment for GOES satellite.

Number of trainees: Between 5 and 10

Entry requirements: Environmental specialists

Degree/Diploma/Certificate awarded: Only participation diplomas/certificates

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: Yes

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Remote sensing

Geographical preference: Central and South American countries

F I N L A N D

INSTITUTION

HELSINKI UNIVERSITY OF TECHNOLOGY, LABORATORY OF SPACE TECHNOLOGY

Otakaari 5 A, 02150 Espoo, Finland

Telex: 123889 Tel.: 358-0-4512371

Contact person: Mr. Martti Hallikainen

Principal function(s) of institution: Education and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: Environmental Electronics (partly)

Duration/Frequency/Language(s) of instruction:
Semester/Every year/Finnish

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 50/25/25/Optional

Facilities: --

Number of trainees: Up to 10

Entry requirements: B.Sc

Degree/Diploma/Certificate awarded: M.Sc. Programmes in Space Technology, Ph.D Programme in Space Technology

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material:
Nominal text, etc. fees

Monthly room and board and incidental expenses:
Approx. FIM 2.500, (in dormitory)

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: --

Geographical preference: None

GERMANY

INSTITUTION

DEUTSCHE FORSCHUNGSANSTALT FUR LUFT- UND RAUMFAHRT e.V. (DLR) (Germany Aerospace Research Establishment)

P.0. Box 9060 58, 5000 Köln 90, Germany

Telex: 8810-0 dlrd Tel.: 49-0-2203-6010
Fax: 02203-67310

Contact person: Prof. Dr. Walter Kröll, Chairman

Principal function(s) of institution: Research, development and scientific services

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: --
Research: Remote sensing of the atmosphere

Duration/Frequency/Language(s) of instruction: --/--/--/--

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: Not separately defined

Facilities: Laboratories, research aircraft and ground-based, mobile field testing equipment

Number of trainees: Depends on number and scope of joint projects

Entry requirements: M.Sc. or Ph.D.

Degree/Diploma/Certificate awarded: None

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: N/A

Monthly room and board and incidental expenses: N/A

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants:
On a case- by-case basis, financial assistance for living expenses may be available

4. COLLABORATION WITH DEVELOPING COUNTRIES

Specific areas of interest: Any area where a foreign partner will make a substantial (not necessarily financial) contribution to a joint project of common interest

Geographical preference: --

INDIA

A. INSTITUTION

INDIAN SPACE RESEARCH ORGANISATION (ISRO), DEPARTMENT OF SPACE

Antariksh Bhavan, New BEL Road, Bangalore-560 094, India

Telex: 0845-2499 Tel.: 0812-334474
Fax: 0812-334229 Cable: ISRO, Bangalore

Contact person: Mr. M.G. Chandrasekhar

Principal function(s) of institution: R&D in Space Sciences, Technology and Application. Execution of National Space Programme at its establishments.

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Forecasting of major weather systems such as tropical cyclones, deep depressions using INSAT data. Research activities being pursued in utilising the cloud wind and temperature information available from INSAT in studying the monsoon performance and forecasting the associated rainfall.
Research: Weather related studies using INSAT data for better forecasting of monsoon and synoptic system such as cyclone and depressions. Preliminary one dimensional and two dimensional models developed for climate change studies proposed to enhance the same to global circulation models altered to suit the India subcontinent.

Duration/Frequency/Language(s) of instruction:
2 years M.Sc/Every year/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --

Facilities: --

Number of trainees: --

Entry requirements: Bachelor Degree in Engineering/Master Degree in Science

Degree/Diploma/Certificate awarded:

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: No course fee is charged for participants covered under Sharing of Experience in Space (SHARES) programme

Monthly room and board and incidental expenses:
Nominal Rate Charged for Accommodation

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants:
Yes. Financial support ranges from Rs. 3000 to Rs. 4500 per month for participant depending on their background and experience.

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Satellite communications

Geographical preference: --

B. INSTITUTION

SPACE APPLICATIONS CENTRE (SAC)

SAC P.O. Ahmedabad 380 053, India

Telex: 012-239/012-261 Tel.: 446099/447043 Cable: SPACE

Contact person: Director, Space Applications Centre (SAC), Jodhpur Tekra, Ahmedabad 380053, India

Principal function(s) of institution: Training, education, research and development, specific projects with users

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Research: Middle atmosphere, monsoon dynamics, cyclone genesis, retrieval of meteorological parameters from satellite data; study of main layer depth related to oceans; use of microwave sensor in meteorology

Duration/Frequency/Language(s) of instruction: --/--/--

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --/--/--/--

Facilities: Experimental satellite earth stations, research and development laboratories and production facilities for earth station and satellite payload equipment; integration and test facilities; access to large general purpose computers: DEC-10 at Ahmedabad and Cyber at Delhi

Number of trainees: Between 1 and 2

Entry requirements: Post-graduate in physics, mathematics, meteorology, computer science

Degree/Diploma/Certificate awarded: Certificate of participation

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Approx. US$ 5,000 per year

Monthly room and board and incidental expenses: US$ 250

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Between 8 and 10

Other financial support available for foreign participants: Living expenses, tuition fees and some incidental expenses can be provided

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: In any of the areas listed above

Geographical preference: Most of the research pertains to the Indian subcontinent and the Indian Ocean, Bay of Bengal and Arabian Sea regions

MEXICO

INSTITUTION

GERENCIA DEL SERVICIO METEOROLOGICO NACIONAL

Av. Observatorio 192, Col. Observatorio Tacubaya, D.F., Mexico

Telex: 1774379 or 1777331 Tel.: 515-20-90
Fax: 271-0878

Contact person:

Principal function(s) of institution: Meteorologia, climatologia y redes de observacion

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Pronostico Del Tiempo y Aplicaciones a la Hidrologia Y Agricultura

Duration/Frequency/Language(s) of instruction:
Permenente/Espanol

Allocation of time spent in Classroom/Laboratory/Field Work/ Independent Research: –

Facilities: Por el Momento No Existen Facilidades Disponibles

Number of trainees: --

Entry requirements: --

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants:
None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Pronostico del tiempo y Huracanes

Geographical preference: None

NETHERLANDS

INSTITUTION

INTERNATIONAL INSTITUTE FOR AEROSPACE SURVEY AND EARTH SCIENCES (ITC)

350 Boulevard 1945, P.O. Box 6, 7500AA, Enschede, Netherlands

Telex: 44525 Tel.: 874444 Fax: 53-874400

Contact person: Drs. P.B. Roeters, research co-ordinator;
Drs. L.J.P. Blom, public relations officer

Principal function(s) of institution: Training, education, research and advisory work

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Technology diploma courses (1), Post-graduate diploma courses (18), M.Sc.-degree courses (15), Certificate level courses (4).
Research: The ITC Research Programme "Survey and Environmental Monitoring for Planning and Management" focuses on research activities in seven problem areas: 1) conservation of tropical rain forests; 2) watershed management; 3) natural hazard assessment and mitigation; 4) information extraction for physical and administrative infrastructure; 5) land and water management in irrigated areas; 6) sustainable use of semi-arid zones; 7) exploration for and environmentally sound exploitation of mineral and water resources. The ITC Ph.D.-programme is a part of the ITC Research Programme.

Duration/Frequency/Language(s) of instruction: 1-24 months/yearly/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: Depending on type of course.

Facilities: Receiving station for NOAA data, digital tapes and image processing laboratory

Number of trainees: 450-500 yearly

Entry requirements: Depending on type of course

Degree/Diploma/Certificate awarded: Ph.D. Degree (in cooperation with a university), M.Sc. Degree, Post-Graduate Diploma, Technologist Diploma, Certificate of Attendance.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: N/A

Monthly room and board and incidental expenses: for details, request ITC General Information Brochure.

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: For details, brochure on ITC General Information should be requested from ITC

Other financial support available for foreign participants: Yes, refer to above-mentioned ITC brochure

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: In all the areas covered by research

Geographical preference: None

NORWAY

INSTITUTION

NORWEGIAN SPACE CENTRE

P.O. Box 85 Smestad, N-0309, Oslo 3, Norway

Telex: 0056-78174 Space n Tel.: 47-2-523800
Fax: 47-2-522397

Contact person: Prof. Arne Grammeltveld, DMNI, P.O. Box 43
Blindern, 0313 Oslo 3, Norway

Principal function(s) of institution: The NSC is responsible for coordinating space activities in Norway.

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Included in courses at the University of Oslo. A special course is given at the University of Bergen.
Research: Good opportunities for graduate studies (Masters and Ph.D) and post graduate research at all places.

Duration/Frequency/Language(s) of instruction:
Semester/each year/Norwegian

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 80%/20%/-/-

Facilities: Ship borne in situ measurements form normally part of research activity.

Number of trainees: Depends on level of course. Contact persons can be contacted.

Entry requirements: --

Degree/Diploma/Certificate awarded: Only normal diplomas

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material:
Normal university fees (low).

Monthly room and board and incidental expenses:
NOK 4-5.000

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants:
The only fellowships/scholarship opportunities available are on post-graduate or visiting scientist basis. Number of opportunities is limited.

Other financial support available for foreign participants:

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Remote Sensing

Geographical preference: None

PAKISTAN

INSTITUTION

PAKISTAN SPACE AND UPPER ATMOSPHERE RESEARCH COMMISSION (SUPARCO)

Sector 28, Gulzar-e-Hijri, P.O. Box 8402, Off University Road
Karachi-75270, Pakistan

Telex: 25720 SPACE PK Tel.: 471001/477151 Cable: SUPARCO
Fax: 9221466902

Contact person: Mr. Ziker-ur-Rehman Siddiqui, Director, Space Science Division, SUPARCO

Principal function(s) of institution: Research and development in space science and technology.

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: As the national space agency, SUPARCO organises courses on satellite applications to meteorological and atmospheric studies for scientists belonging to various national agencies. These courses held at SUPARCO's Space and Atmospheric Research Centre (SPARCENT) at Karachi, cover the following: Acquisition of data from meteorologial satellites. application of satellite data to various meteorological and related environmental studies; determination of vertical profiles of atmospheric parameters through satellite radiance; study of earth's atmosphere through balloon and rocket soundings; air pollution monitoring; collection of environmental data from unmanned Data Collection Platforms
Research: Research studies on the topics mentioned above are being carried out at SPARCENT. Satellite data acquired from the NOAA meteorological satellites in APT mode as well as the environmental data acquired through DCPs are also provided to other concerned agencies.

Duration/Frequency/Language(s) of instruction: 2-3 week/annual or bi-annual/English.

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 25%/20%/30/25%.

Facilities: SUPARCO has sophisticated ground receiving station for acquisition of NOAA APT pictures and facilities for reception of TOVS/HRPT data. Micro computer based systems are available for the processing of NOAA and TOVS/HRPT data. Other facilities include DCPs for the collection of environmental data from remote and inaccessible areas and Local User Terminal (LUT) for acquisition and processing of these data under the ARGOS Network; Surface Air Pollution Monitoring Equipment; Analytical Chemistry Lab. for the analysis of field samples; Balloon Sounding Facility for Stratospheric Ozone and related Upper Atmospheric Studies.

Number of trainees: The usual number of trainees in the course, essentially organised for Pakistani scientists, is 15 to 20. However, 1-2 foreign scientists may also be accommodated.

Entry requirement: M.Sc in Maths/Physics/Computer, Science/Bachelor's Degree in Engineering in relevant field.

Degree/Diploma/Certificate awarded: Certificate is awarded on the successful completion of the training course.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: US $150

Monthly room and board and incidental expenses: US $500 per week.

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Remote sounding of atmosphere and application of environmental satellite data.

Geographical preference: Developing countries of ESCAP and ESCWA regions

PERU

INSTITUTION

SENAMHI

Av. Republica de Chile - 295, Oficina 205, Lima, Peru.

Telex: (5114) 336340 Tel.: 336340

Contact person: Alfonso Maguina Lopez; Otto Ramos Bustos

Principal function(s) of institution: Vigilancia del tiempo y el clima, investigación en meteorologia, Agrometeorologia e Hidrologia.

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Meteorologia, Climatologia e Hidrologia.

Duration/Frequency/Language(s) of instruction:
15 dias/Anual/Español

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 20%/20%/30%/30%

Facilities: Informaciones hidrometeorolôgicas, Instrumental, personal capacitado.

Number of trainees: --

Entry requirements: Fisica-Matemática-Meteorologia

Degree/Diploma/Certificate awarded: Certificado de capacitación

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Meteorologia, Hidrologia, Oceanografia.

Geographical preference: --

PHILIPPINES

INSTITUTION

PHILIPPINE ATMOSPHERIC, GEOPHYSICAL AND ASTRONOMICAL SERVICES ADMINISTRATION (PAGASA)

ATB Bldg., I424 Ouezon Avenue, Ouezon City 3008, Philippines

Telex: 42021 PAGASA PM Tel.: 922-8401 Cable: WXMLA

Contact person:

Principal function(s) of institution: Provision of meteorological, hydrological and climatological services

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: --
Research: Application of remote sensing data to weather forecasting.

Duration/Frequency/Language(s) of instruction: --

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --

Facilities: --

Number of trainees: --

Entry requirements: --

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Climate change

Geographical preference: Southeast Asia

QATAR

INSTITUTION

SCIENTIFIC AND APPLIED RESEARCH CENTER (SARC), REMOTE SENSING UNIT (RSU)

P.O. Box 2713, Doha, Qatar

Telex: 4630 UNVSTY-DH Tel.: (0974) 874961

Contact person: Dr. Jaber Al-Noaimi

Principal function(s) of institution: Research and Education

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Use of meteorological satellite data to monitor regional environmental phenomena, pollution and ground water studies

Duration/Frequency/Language(s) of instruction: --

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --

Facilities: ERDAS System installed on a PC with the basic peripherals; NEC Color Data Analysis System.

Number of trainees: Between 2 and 5

Entry requirements: B.Sc. in Geography

Degree/Diploma/Certificate awarded: Professional

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3 SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants:
None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Remote Sensing

Geographical preference: Arab countries of the Gulf Cooperative Council (GCC)

SAUDI ARABIA

INSTITUTION

SAUDI CENTER FOR REMOTE SENSING

King Abdulaziz City For Science & Technology
(K A C S T), Kingdom of Saudi Arabia

Telex: 404017 SCITEC SJ Tel.: (966 1) 481 1141
Cable: MAWSOAH Fax: (966 1) 4883756

Contact person: --

Principal function(s) of institution: Applied Research, R&D

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Providing Data from NOAA 9 and 10 for Meteorological Research in the Kingdom for Weather Forecasting

Duration/Frequency/Language(s) of instruction: --

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --

Facilities: Image Processing Systems, Receiving Station

Number of trainees: --

Entry requirements: --

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants:

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Remote Sensing

Geographical preference: Yes, due to availability of data in the Centre

SOUTH AFRICA

INSTITUTION

COUNCIL FOR SCIENTIFIC AND INDUSTRIAL RESEARCH (CSIR)

P.0. Box 395, Pretoria 0001, South Africa

Telex: 3-21312 Tel.: 27 12 841-9211 Fax: 27 12 86-2856

Contact person: Director, Division of Microelectronics and Communications Technology, P.O. Box 395, Pretoria, 0001, South Africa; Director, Division of Earth, Marine and Atmospheric Science and Technology (DEMAST), P.O. Box 395, Pretoria, 0001, South Africa

Principal function(s) of institution: --

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: No formal courses in satellite meteorology are offered. However, the South African Weather Bureau conducts in-house training on the applications of satellite meteorology
Research: Carried out by the South African Weather Bureau and certain divisions of CSIR. Climate variability over Southern Africa and the behaviour of the Agulhas Current. Participation in International Satellite Cloud Climatology Project

Duration/Frequency/Language(s) of instruction: --/--/--

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research:--/--/--/--

Facilities: The Division of Microelectronics and Communications Technology operates the Satellite Applications Centre. This facility receives, records and archives meteorological data from geostationary and polar orbiting meteorological spacecraft. Advanced image processing facilities are available for radiometric and geometric manipulation of meteorological data. In addition, image processing facilities exist in a number of other CSIR divisions.

Number of trainees: -

Entry requirements: --

Degree/Diploma/Certificate awarded: None

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: --

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: Funds are available to support visiting scientists to work in fields of mutual interest

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Monitoring programme, oceanography, image processing techniques

Geographical preference: Southern Africa

SPAIN

INSTITUCION

INSTITUTO NACIONAL DE METEOROLOGIA

Paseo de las Moreras s/n Ciudad Universitaria, Madrid, Spain

Telex No.22427 Teléfono: 2443500

Persona a contactar: --

Funciónes principales de la institución: Desarrollo

1. PROGRAMAS ACADEMICOS Y CIENTIFICOS

Lista de cursos y actividades de investigación:
Está previsto en el Plan de Renovación Tecnológico del Instituto un gran desarrollo de la meteorología, adquiriendo estaciones receptoras, tanto primarias como secundarias, para la recepción de imágenes procedentes de satélites de finalidad meteorológica

Duración/Frecuencia/Idioma(s) de enseñanza: --/--/--

Distribución del tiempo en Trabajo en Clase/Laboratorio/Trabajo en el terreno/Investigaciones independientes: --/--/--/--

Tipo de servicios o instalaciones: --

Número de servicios o instalaciones: --

Calificaciones academicas (mínimas) requeridas: --

Certificados o diplomas extendidos por la institución: --

2. COSTO DE LOS PROGRAMAS

Costo de los cursos, de los libros de texto, y de los materiales deinvestigación afines: --

Gastos mensuales de alojamiento y manutención y gastos menudos: --

3. DISPONIBILIDAD DE ESTUDIO/BECAS

Disponibilidad de estudio/becas para participantes extranjeros: --

Otras posibilidades de ayuda financiera para participantes extranjeros: --

4. COLABORACION CON LOS PAISES EN DESARROLLO: Si

Esfera de interés: Meteorología mediante satélites

Region geográfica determinada: Ninguna

TRINIDAD AND TOBAGO

INSTITUTION

METEOROLOGICAL SERVICE

Piarco International Airport, Piarco, Trinidad and Tobago

Telex: 25311 Tel.: 664-5465 Fax: 664-4009

Contact person: Mr. John Jackman

Principal function(s) of institution: Meteorological/Climatological Activity for National Development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Utilization of satellite photographs in Synoptic Meteorology as means to develop an increased understanding of tropical weather systems and as an aid in the forecasting of tropical weather on an operational basis.

Duration/Frequency/Language(s) of instruction:
No instructional programme - operational use only.

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: N/A

Facilities: Forecast Office facilities - Technavia Satellite pictures receiving system with picture enhancing capability.

Number of trainees: --

Entry requirements: N/A

Degree/Diploma/Certificate awarded: --

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: N/A

Monthly room and board and incidental expenses: N/A

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: N/A

Other financial support available for foreign participants:
N/A

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Applications and interpretation of available satellite meteorology data

Geographical preference: Caribbean Basin and Tropical zone of Atlantic Ocean

UGANDA

INSTITUTION

DEPARTMENT OF METEOROLOGY

P.O. Box 7025, Kampala, Uganda

Tel.: 258537 Fax: 256-41-256166

Contact person: Mr. S.A.K. Magezi

Principal function(s) of institution: Meteorology (including Research and Training)

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Meteorological Satellite Imagery: Mainly interpretation and vegetation differentiating. Climate change studies: An Analysis of the temperature field as well as impact assessment.

Duration/Frequency/Language(s) of instruction:
3 months/Annual/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 10%/5%/-/-

Facilities: Meteorological Training School & Satellite Receiver Equipment.

Number of trainees: Between 2 and 4

Entry requirements: Higher School Certificate (Physics and Maths)

Degree/Diploma/Certificate awarded: Professional

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Variable

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants:
None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Study tours and research findings exchange

Geographical preference: --

UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND

A. INSTITUTION

DUNDEE UNIVERSITY

Dundee DD1 4HN, Scotland, United Kingdom

Telex: 931211-826 DUG Tel.: 38223181 Fax: 382-202830

Contact person: Dr. R.A. Vaughan, Department of Applied Physics and Electronic and Manufacturing Engineering, Dundee University

Principal function(s) of institution: Training and research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: M.Sc. course on remote sensing, image processing and applications

Duration/Frequency/Language(s) of instruction:
1 year/Annually/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 25%/20%/5%/50%

Facilities: Fully equipped teaching laboratories, computing facilities

Number of trainees: Between 5 and 20

Entry requirements: Degree

Degree/Diploma/Certificate awarded: M.Sc.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: 2,104 British Pounds (home and EEC); 6.630 British Pounds (overseas) (1991-92 figures)

Monthly room and board and incidental expenses: 500 British Pounds

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Yes

Other financial support available for foreign participants: ODA/British Council; must be applied for in foreign applicant's own country

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Atmospheric effects

Geographical preference: None

B. INSTITUTION

UNIVERSITY OF BRISTOL, REMOTE SENSING UNIT

Bristol, BS 8 1SS, United Kingdom

Telex: BSUNIV 445938G Tel.: 0272-303745 Fax: 0272-732657

Contact person: Dr. E.C. Barrett, Director

Principal function(s) of institution: Education (undergraduate); postgraduate training; applications research; contractual activities

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: First degree: Components of first degree course in geography max. 20 hrs (Year 1), 36 hrs (Year 2), 24 hrs (Year 3) plus project and dissertation if selected; satellite climatology and meteorology 12 hrs (Year 1), 15 hrs (Year 3), related GIS computing and statistics, Postgraduate Degrees: Purpose - built individual training plus project work for M.Sc. or Ph.D.

Duration/Frequency/Language(s) of instruction: See above/Annually/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 5%/40%/25%/30%

Facilities: Network of SUNs with RS/GIS software packages (including ERDAS, LUCID, GRAS, ARC/INFO); dedicated VAX-11-750 minicomputer, networked to university mainframe (Honeywell) and SW England computers;

TDS digitizer with dedicated OPUS-PC microcomputer; METEOSAT DDVS. DMSP SSM/1 PS2 system.

Number of trainees: Between 6 and 12

Entry requirements: Matriculation (undergraduate); good honours Bachelor's degree (postgraduate)

Degree/Diploma/Certificate awarded: M.Sc., Ph.D.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Request details from University of Bristol.

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: British Council, World University Service

4. COLLABORATION WITH DEVELOPING COUNTRIES

Specific areas of interest: Development of integrated algorithms for operational use to solve atmosphere-related problems at the Earth's surface, especially in meteorology, hydrology, climatology, oceanography, land use, geology, etc.

Geographical preference: Africa, South America, Middle East, Asia

C. INSTITUTION

UNIVERSITY OF BRADFORD, DEPARTMENT OF COMPUTING

Phoenix Bldg. University of Bradford, BD7 1DP, United Kingdom
Telex: 51309 UNIBFD G Tel.: 44.274.383951 Fax: 44.274.383920

Contact person: Prof. J. Stephenson

Principal function(s) of institution: Education, Research, Development

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: PC based low cost reception systems for METEOSAT/GOES/NOAA-AVHRR. Real time capture and image processing. Rainfall estimation from METEOSAT. MDD/DCP.
Research: Image Processing Tools. Reliable fault tolerant capture software. Automatic alarm software from series of Meteosat/NOAA images (storms, fires). Meteosat/NOAA. Database systems (temperal) for images.

Duration/Frequency/Language(s) of instruction:

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --/--/--/--

Facilities: Real time capture of Meteosat/NOAA drafted data. Also of DCP/MDD data from METEOSAT. Extensive PC based image processing systems. Also many SAN-UNIX systems.

Number of trainees: Variable

Entry requirements: Good degree including computing

Degree/Diploma/Certificate awarded: MPhil/PhD

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Standard Research Student Fee (£6000 per annum for non-EEC)

Monthly room and board and incidental expenses: £400 per month

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Yes

Other financial support available for foreign participants:
None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest:

Geographical preference: None

D. INSTITUTION

UNIVERSITY OF EDINBURGH, DEPARTMENT OF METEOROLOGY

King's Buildings, Edinburgh, United Kingdom

Telex: 8-4466 Tel.: 031 650 5101

Contact person: Head of Department

Principal function(s) of institution: Education and Research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: M.Sc. in Remote Sensing and Image Processing Technology
Research: Research into cloud classification by textural and spectral techniques

Duration/Frequency/Language(s) of instruction:
12 months/Every year/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 34%/16%/-/50%

Facilities: Computer hardware, data links, image processing systems, Meteosat receiver

Number of trainees: Up to 5

Entry requirements: Honours degree in Physical science or mathematics

Degree/Diploma/Certificate awarded: M.Sc or diploma for taught program; Ph.D. or M.Phil for research

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Ł7000 per annum for non-EC participants

Monthly room and board and incidental expenses: None

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants:
Yes. ORS (difference between overseas & home fees). British Council (full costs)

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Could be negotiated

Geographical preference: --

E. INSTITUTION

UNIVERSITY OF READING, DEPARTMENT OF METEOROLOGY

2 Earley Gate, Reading, UK, RG6 2AU, UK

Telex: 847813 (RULIB) Tel.: 0734 875123

Contact person: Dr. J.R. Milford

Principal function(s) of institution: Education and Research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: i) short courses within the BSc and MSC programme in meteorology. Research on use of METEOSAT data in African tropical meteorology, particularly with regard to rainfall. ii) short courses for training in operational rainfall estimation.
Research: Storm climatology, modelling and forecasting in Africa

Duration/Frequency/Language(s) of instruction:
i) 20 hours/Annually/English
ii) 2 weeks to 3 months/occasional/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research:

Facilities: Meteosat & NOAA AVHRR receivers. GEMSOFT and SUN workstation.

Number of trainees: Between 3 and 8

Entry requirements: BSc

Degree/Diploma/Certificate awarded: None

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Satellite meteorology training-Ł1000 per month per person

Monthly room and board and incidental expenses: --

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: --

Geographical preference: None

F. INSTITUTION

UNIVERSITY OF BRADFORD, DEPARTMENT OF ELECTRICAL ENGINEERING

Richmond Road, Bradford BD7 1DP, United Kingdom

Telex: 51309 UNIBFD Tel.: +44 274 733466

Contact person: Professor J. Stephenson

Principal function(s) of institution: Education and Research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Research in design of receivers and image segmentation algorithms for NOAA/AVHRR and METEOSAT/GOES

Duration/Frequency/Language(s) of instruction:
1 week/yearly/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 50%/10%/-/40%

Facilities: Archive of LANDSAT images; image processing facilities; optical propagation software. Airborne transmitter, vehicle equipped as receiver, Microwave laboratories. Anechoic chambers. Simulation software. Oxenhope Moor Experimental Station. Satellite receivers.

Number of trainees: Up to 3

Entry requirements: BSc

Degree/Diploma/Certificate awarded: MSc, MPhil, PhD

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material:
Ł6,500 per annum

Monthly room and board and incidental expenses:
Approximately Ł1,000

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: --

Geographical preference: None

G. INSTITUTION

UNIVERSITY OF ESSEX, DEPARTMENT OF MATHEMATICS

Wivenhoe Park, Colchester C043SQ, United Kingdom

Telex: 98440 UNILIB G Tel.: +44 206 873040 Fax: +44 206 873598

Contact person: Professor A.R. Holt

Principal function(s) of institution: Education and Research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:Modelling of scattering from precipitation and ice particles across the microwave/millimetre wave frequency range.

Duration/Frequency/Language(s) of instruction: --/--/--

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --/--/--/--

Facilities: Excellent library facilities, access to colour graphics workstations. Software for calculating scattering from hydrometeors and various propagation parameters.

Number of trainees: 1

Entry requirements: Good first degree qualification in applied maths, or in electrical eng. or physics with good mathematical content.

Degree/Diploma/Certificate awarded: M.Sc by dissertation

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: 1991/2: Tuition £6,630 (£2104 for EC Students)

Monthly room and board and incidental expenses: Approximately £370 for first year; £450 subsequently (1st year normally given university accommodation)

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: This university has no fellowships or scholarships available to persons from outside (occasionally scholarship is available to graduates of this university). There are awards available through the ORS scheme which reduces the fee from Ł6,630 to Ł2,104. Such awards are available through a national competition.

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: --

Geographical preference: --

UNITED STATES OF AMERICA

A. INSTITUTION

UNIVERSITY OF ARIZONA, ARIZONA REMOTE SENSING CENTER

Office of Arid Lands Studies, 845 N. Park Ave., Tucson, Arizona 85719, United States

Telex: 1561507 Arid UT
Cable: ARIDLANDS TUCSON, ARIZONA
Tel.: (602) 621-7896
Fax: (602) 621-3816

Contact person: Director

Principal function(s) of institution: Research, training and instruction

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities: The Arizona Remote Sensing Center employs meteorological satellite data for multi-temporal evaluation of land resources and study of precipitation/runoff relationships in arid/semi-arid watersheds

Duration/Frequency/Language(s) of instruction: --/--/--

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --/--/--/--

Facilities: Image processing, display and mapping system

Number of trainees: Between 1 and 5

Entry requirements: Prefer currently-enroled university-level students or graduates

Degree/Diploma/Certificate awarded: Certificate

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material:
$US 450/person/week

Monthly room and board and incidental expenses: $US 350-500

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: --

Other financial support available for foreign participants: --

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Resource mapping/desertification monitoring using integrated satellite and aerial systems to accompany ground sampling methodology; agricultural potential assessment; agricultural yield/yield production; integration of small image processing facilities to resource management

Geographical preference: Arid/semi-arid lands

B. INSTITUTION

COLUMBIA UNIVERSITY, GODDARD INSTITUTE FOR SPACE STUDIES

2880 Broadway, New York, N.Y. 10027, United States

Tel.: 212-678-5500

Contact person: William B. Rossow, Institute for Space Studies, 2880 Broadway, New York, N.Y. 10025

Principal function(s) of institution: Education and academic research

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Graduate programme in atmospheric and planetary science leading to the Ph.D. degree
Research: Broad studies of global climate and climate changes, biogeo-chemical cycles, planetary atmospheres, Earth observations including Global Processing Center for the International Satellite Cloud Climatology Project, instruments on planetary and Earth-orbiting spacecraft

Duration/Frequency/Language(s) of instruction: 4-6 years/--/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: --/--/--/100%

Facilities: Computer facilities (Amdahl 470/V6, IBM 4341 computers, IBM 7350 image display system); library of visible/infra-red imagery from geostationary and polar-orbiting satellites, data from other planetary and Earth-orbiting spacecraft

Number of trainees: Up to 2

Entry requirements: Background in physics and mathematics, knowledge of Fortran

Degree/Diploma/Certificate awarded: M.Sc., Ph.D.

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: $US 13,500

Monthly room and board and incidental expenses: $US 500

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: None

Other financial support available for foreign participants: Graduate research assistant ships

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Global climate modelling/radiation physics/cloud climatology/land surface processes/biogeochemical processes/ocean circulations

Geographical preference: None

C. INSTITUTION

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION (NASA)

Washington, DC 20546

Telex: 89530 NASA Tel.: 202-453-1000

Contact person: Dr. Chester McKee, Director, Associateship and Fellowship Programs, National Research Council (NRC), 2101 Constitution Avenue, Washington, DC 20418

Principal function(s) of institution: Scientific and technical research in the fields of aeronautics and space exploration

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Research: Resident Research Associateships (RRA) as guest investigators in laboratories at seven NASA Research Centers and the Jet Propulsion Laboratory. Advanced basic research is in all areas of space science and technology, with particular topics identified in yearly brochures published by and available from the NRC

Duration/Frequency/Language(s) of instruction: One year/Continuous/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: 0%/Variable/Variable/Variable

Facilities: Full range of laboratory, fields and space equipment

Number of trainees: Approximately 200 U.S. and foreign trainees per year for all areas of aeronautical and space research

Entry requirement: Ph.D. or equivalent

Degree/Diploma/Certificate awarded: None

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: None

Monthly room and board and incidental expenses: Stipend paid for self-support covers all normal living expenses

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Available through NRC. Number varies, but approximately 80 per year in the last few years

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: All areas of space science

Geographical preference: None

D. INSTITUTION

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA), NATIONAL ENVIRONMENTAL SATELLITE, DATA AND INFORMATION SERVICE (NESDIS)

Washington DC 20233

Telex: 248-376 Tel.: 301-763-458 Cable: NOAA/NESDIS

Contact person: Betty A. Howard, International and Interagency Affairs, Office, Code E/IA

Principal function(s) of institution: NESDIS administers an integrated program for the development and use of operational civilian satellite-based environmental remote sensing systems, as well as the acquisition, processing, archiving, analysis, and dissemination of environmental data from satellites and other services.

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: NESDIS provides meteorological satellite and data information training opportunities to scientists and other trained practitioners in the interest of fostering international cooperation in weather data exchanges and in promoting similar programs in developing countries. The training form varies

and is provided according to the availability of NESDIS personnel and resources. Much of its international training activity is conducted in collaboration with the World Meteorological Organization and the National Weather Service. Several regional courses have been conducted, with the objective of training operational meteorologists in basic and advanced techniques of using satellite imagery for forecasting purposes. In addition, NESDIS periodically participates in United Nations and other training programs, with scientists studying at NESDIS facilities and training courses. In cooperation with the U.S. Agency for International Development and the UN/Economic and Social Commission for Asia and the Pacific (ESCAP), NESDIS has conducted training courses on satellite crop monitoring and drought early warning in International Space Year training course in conjunction with the UN Space Applications Programme. This course on remote sensing applications for environmental assessment and monitoring was held at the EROS Data Center in Sioux Falls, South Dakota, during September and October 1991. In addition, NESDIS hosts and provides specialists to serve as lecturers at international workshops and training courses in cooperation with such international organizations as the WMO. Also, in cooperation with the U.S. Agency for International Development (USAID), NESDIS provides technical assistance and training through programs aimed at improving disaster early warning and food production throughout the developing world

Research: The Resident Research Associateships (RRA) Program is conducted by the National Research Council and sponsors selected scientists and engineers for tenure as guest investigators in NESDIS laboratories, among others. Research opportunities are offered in NOAA activities as they relate to the oceans, atmosphere, and in some areas, the solid earth, with specific projects identified in yearly brochures published by and available from the NRC

Duration/Frequency/Language(s) of instruction: Varies/Varies/English

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: Variable

Facilities: Full range of laboratory, field and space equipment

Number of trainees: Training number varies from year to year. The NOAA Resident Research Associateship Program usually accommodates 1-3 fellowships a year, depending on funding availability.

Entry requirement: Training variable; NOAA Resident Research Associateship Program - Ph.D. or equivalent

Degree/Diploma/Certificate awarded: None

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: None

Monthly room and board and incidental expenses: Varies with location

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Available through National Research Council.

Other financial support available for foreign participants: None

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific area of interest: Meteorological satellite and data information training as shown above

Geographical preference: None

ZIMBABWE

INSTITUTION

NATIONAL REMOTE SENSING FACILITY

P.O. Box 8039, Causeway, Zimbabwe

Tel.: 790701

Contact person: A.B. Made, Box 8039, Causeway, Harare, Zimbabwe

Principal function(s) of institution: Education, research, development, teaching and project execution

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
Courses: Basic remote sensing courses for agriculture, vegetation and mineral exploration using satellite data.
Research: Crop monitoring, environmental monitoring and mineral exploration using satellite data. Geographic information systems application

Duration/Frequency/Language(s) of instruction: 2 semesters/Annually/English

Facilities: Mirror stereoscopes, ERDAS digital image processing system, Zoom transfer scope (Bausch & Lomb), Wild/LEITZ Aviopret, fully equipped photolaboratory, specialized printing press, PROCON-2 overhead projectors, slide projectors

Number of trainees: 15 - 25

Entry requirements: lst year University

Degree/Diploma/Certificate awarded: Degrees

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: By State

Board, etc.: Provided by State

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: State fellowships are available

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific areas of interest: Application of remote sensing to crop monitoring and mineral exploration

Geographical preference: SADCC

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS (FAO)

FAO REMOTE SENSING CENTRE (FAORSC)

Via delle Terme di Caracalla, 00100 Rome, Italy

Telex: 610181 FAO I Tel.: 57971 Cable: FOODAGRI ROME
Fax: 57975731, 57973152

Contact person: Z.D. Kalensky, Chief, Remote Sensing Centre

Principal function(s) of institution: Advising and assisting developing countries on the use of remote sensing technology in the agriculture, forestry and fisheries sectors, with the main emphasis on food security, sustainable management of renewable natural resources and environmental protection.

1. ACADEMIC AND SCIENTIFIC PROGRAMMES

Summary of courses and research activities:
1) Included in some of the short term training courses on remote sensing applications to renewable natural resources and workshops for decision makers, often in cooperation with other UN agencies, international organizations and Member Countries.
2) Development and operational use of satellite remote sensing techniques for drought assessment and environment monitoring, mainly in Africa, in the context of FAO Early Warning System.
3) Pilot projects for testing and development of new remote sensing techniques appropriate for operational applications in developing countries.

Duration/Frequency/Language(s) of instruction: --/--/English or French

Allocation of time spent in Classroom/Laboratory/Field Work/Independent Research: Varying

Facilities: Primary data users station and secondary data users station for Meteosat. Dedicated computer system for processing and analysis of data from environmental satellites (Meteosat and NOAA-AVHRR); ARTEMIS - Africa Real Time Environmental Monitoring Information System. Digital image analysis systems DIPIX-ARIES 3 and SEP-PERICOLOR 2001. PC-based geographic information system packages ILWIS and IDA.

Number of trainees: Between 15 and 25 in co-operation with other international organizations

Entry requirements: University degree in relevant discipline. Current work responsibilities compatible with theme of the training course/workshop

Degree/Diploma/Certificate awarded: Attendance certificate

2. COST OF PROGRAMMES

Cost of tuition, texts and related research material: Free (no stipend paid)

Monthly room and board and incidental expenses: Provided to some participants unless in host country

3. SCHOLARSHIP/FELLOWSHIP OPPORTUNITIES

Scholarship/Fellowship opportunities for foreign participants: Several a year. FAO provides fellowships under its executed field projects in development countries

Other financial support available for foreign participants: Return travel and per diems covered for selected participants

4. COLLABORATION WITH DEVELOPING COUNTRIES: Yes

Specific area of interest: Since 1972 the FAORSC has been assisting Member States in applying remote sensing technology to a wide spectrum of renewable natural resources, particularly as related to agriculture, forestry and fisheries

Geographical preference: Developing countries with priorities assigned according to their needs

Litho in United Nations, New York
33027–June 1993–2,725